



Rompho, Nopadol (2006) An economic value added and balances scorecard for a university in Thailand. PhD thesis.

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**AN ECONOMIC VALUE ADDED AND BALANCED
SCORECARD FOR A UNIVERSITY IN THAILAND**

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**A Thesis Submitted in Fulfilment of the Requirement for the Degree of
Doctor of Philosophy**

**To
The Department of Business and Management
University of Glasgow
Glasgow, United Kingdom**

September 2006

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ABSTRACT

As a result of the economic crisis resulting in the decrease in the government budget on education, together with existing calls for more efficiency and less cumbersome bureaucratic infecting the Thai university system, the Thai government set up the guideline that each public university in Thailand should become autonomous while still remaining as a public university. Under this new environment, university will have to generate income without existing substantial funding support from the government. This will have a profound effect on every participant in university community. It raises question of how quality of higher education can be maintained without substantial support from the government.

To be able to survive under the completely new environment, all public universities must apply an appropriate performance measurement system. The adoption of better performance measurement can be a key to establish a system which allows a university to better compete, both locally and internationally, while also maintaining its academic excellence. A literature review, however, reveals that such a system is still not in place for a public university in Thailand. Studies of the design of new performance measurement frameworks for public universities in Thailand under the totally new environment after becoming autonomous university are rarely reported. This area is obviously not sufficiently explored.

This thesis, therefore, attempts to integrate the concepts of EVA® and the Balanced Scorecard into a new performance measurement model for a public university in Thailand. The research methods used in this study are case study research and survey research. A public university, Thammasat University, is selected as the case study. The data collection methods used in the case study and survey research are questionnaire distribution and interview. In the case study research, interviews were conducted to university's stakeholders and questionnaires were distributed to academic staff in the case study university.

Results from the case study research suggest that there are currently problems in the existing performance measurement system of the university. As a result, EVA® and

the Balanced Scorecard are promoted as frameworks to be implemented the university. A new model is then built qualitatively, based on the results from the case study research. After the new model is built, it is compared to the other models currently applied in the other universities. The model is generally accepted and can be implemented into Thai public universities successfully and results from the survey of staff in all public universities in Thailand suggest that the bottom-up approach is preferable for the implementation of the model.

The model created in this thesis is original in its design and its application. After extensive literature reviews, no evidence of the integration of the Balanced Scorecard and EVA® to be used in universities was found. This thesis therefore enhances the existing knowledge of the Balanced Scorecard and EVA® by integrating the two concepts and applying them in combination to an organisation where, according to literature reviews, they have never been implemented before. It is also unique in the way that this model is originally created to fit the reflection of Thai culture in the university context. Its creation is also based on input from stakeholders, a practice rarely reported in the literature.

The results from this thesis can also be generalised in other public universities in Thailand. This is possible because the results from the case study research are obtained from one case study university which represents typical public universities in Thailand. Thus all variables that affect the design of the model are very similar to those of the other public universities in Thailand. Furthermore the opinions of management staff, who are the potential users of the model, in other public universities in Thailand are also collected in the survey research. Those samples are statistically large enough to make the statistical generalisation to the population of all management staff in other public universities. The results also suggest that management staff in other public universities in Thailand welcome the use of the new model and are confident that the new model can be implemented in their universities successfully. It is finally expected that the model created in this thesis can be used as a tool for all public universities in Thailand or even in other countries and can help a university diagnose its performance and better manage its organisation, which finally will lead to the achievement of its mission.

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ACKNOWLEDGEMENTS

I would like to take this opportunity to express my sincere appreciation to the following people:

- Dr. Geoff Southern, my academic supervisor, for his valuable recommendations, guidance, and support throughout the research. Without his support, this thesis could never been successful.
- Professor Douglas Macbeth for his constructive comments and valuable suggestions.
- The internal examiner, Professor Robert Paton and the external examiner, Robert van der Meer for their time to read and comment my thesis and valuable recommendations and suggestions.
- The Faculty of Commerce and Accountancy, Thammasat University for providing me both financial and academic supports.
- All interviewees and respondents. Although none of these persons can be named, the time they spent answering questions and providing data is greatly appreciated.
- All lecturers at the Faculty of Commerce and Accountancy, Thammasat University for their valuable recommendations and suggestions.
- My beloved family, Mr. Smarn Rompho, my father, Mrs. Sunan Rompho, my mother, and Mr. Montri Rompho, my brother, who always support and encourage me.
- My beloved wife, Mrs. Bunjongjit Rompho, my daughter, Napisa Rompho, who was born during the study in July 2003, and my son, Praj Rompho who was born during the study in June 2006 without them I cannot come this far.

CHAPTER ONE: INTRODUCTION

In a modern economy, knowledge is one of the most important factors that influence the development of a nation. It helps strengthen competitive advantage in the global market and helps develop the standard of life within the country. Consequently, many nations around the world turn to focus on the importance of education. Thailand is no exception. Education in Thailand is an important mechanism to establish skilled manpower, research, and new knowledge and technology that support the development of the country.

The World Trade Organisation (WTO) is implementing a policy that emphasises liberisation of the service sector. Thailand, as a member of the WTO, must follow this policy, which means that Thailand has to liberise its education service, which is one of the service industries. This will lead to higher competition among education institutions both inside, and from outside the country.

In addition to the external factors, the higher education sector in Thailand continues to expand as the number of student continues to increase (Ministry of University Affairs, 2002). Many new public and private universities have been created and new programmes have been developed to satisfy the increasing market (Ministry of University Affairs, 2002). This situation is not found only in Thailand but also the rest of the world. The marketisation of higher education including the changing role of national governments is becoming the trend of higher education sector in the 21st century (De Boer et al 2002). There is also increasing number of privatised higher education institutions, which are formerly public and increasing competition among these institutions (Altbach, 1999; Kwong, 2000).

However, although this sector is successful in term of quantity, its quality remains in doubt. In Thailand a typical university, in the past, has failed to produce graduates that meet market demand. This results in high rate of unemployment of new graduates. In 2000, more than 145,000 graduates were unemployed, a 21% increase from the previous year (National Statistical Office, 2005). This creates the serious problem that leads to a debate of higher education reform in Thailand.

Higher education in Thailand is affected by many factors. These factors include an imbalance in the distribution of higher education, which creates unequal opportunities for education, deteriorating human resource development, and increasing competition among higher education institutions. Furthermore, former governments paid very little attention to higher education and politicians tended to show little interest in higher education. Education acts were also obsolete. Constant changes of Thai government weakened the higher education system through interruptions. As a result of these factors, too many government agencies were involved in the national education plan and plans were inconsistent.

During the 1990s, the economic crisis resulted in a decline in economic growth, which led to mass unemployment. As a consequence, the government budget on social issues was considerably curtailed. This, together with existing calls for more efficiency and less cumbersome bureaucratic infecting the Thai university system led the government to set up a guideline that each public university in Thailand should become autonomous while still remaining as a public university. Therefore each university will have to generate income without existing substantial funding support from the government. This will have a profound effect on every participant in university community. This raises question of how quality of higher education can be maintained without substantial support from the government.

To ensure academic excellence, in 1999, the government enacted the Education Act, which aims to reform the educational system in Thailand. One of the important parts of the Act is related to the quality assurance of the education institutions. This includes both the internal and external quality assurance systems for higher education institutions. The internal quality assurance refers to the quality control, which aims to gain trust from all staff within organisation, while the external quality assurance refers to the mechanism established by other external organisation that examines the organisation quality system. The Office for National Education Standards and Quality Assessment (ONESQA) was also established in 2000 to develop the external quality assurance process and the framework and standard of quality assurance and to monitor each education institution in regard to quality assurance. The ONESQA therefore plays important role to ensure that each university maintains its own education standards after liberalisation.

In July 2002, the ONESQA issued a framework of external quality assessment for higher education institutions. This assessment is aimed improving the standard of higher education, to maintain the academic standard of each higher education institution, and to support each institution to develop its own internal quality assurance system. The model of this assessment is called ‘the amicable assessment model’ (Office for National Education Standards and Quality Assessment, 2002:28). This model supports the concept that each assessor must be widely recognised in a particular field. They must also understand each institution deeply and can consider issues that are related to mission and goals of each institution. Additionally, each assessor must be able to assess the situation of the institution, report the results, and make recommendations to each institution so that it can use the report to develop its organisation. The assessment is separated into three main parts: the awareness, the attempt, and the achievement (Office for National Education Standards and Quality Assessment, 2002:28). Each higher education institution will be assessed based on these three criteria. It has to ensure that there is evidence that the quality assurance is monitored, each institution tries to develop the standard, and each institution can reach the goal set up in particular year (Office for National Education Standards and Quality Assessment, 2002:29).

The ONESQA also proposed performance indicators for higher education institutions. These indicators are chosen based on the following criteria (Office for National Education Standards and Quality Assessment, 2002:29).

1. Indicators must follow the guideline and objectives of the education specified in Education Act 1999.
2. Indicators must reflect the mission and goals declared by each higher education institution.
3. There should not be too many indicators, however the chosen indicators should be important and should be accepted among all higher education institutions.
4. Indicators should recognise the pattern and diversity of higher education institutions.

5. Indicators should recognise the importance of internal quality assurance in each higher education institution.
6. Indicators should continuously stimulate the development of quality and standard of higher education institutions.
7. Indicators should correspond to the international standard, which will enable each higher education institution compete internationally.

Based on this guideline, the ONESQA proposes the performance indicators for higher education, which contains twenty-eight indicators in eight standards, which is shown in Table 1.1.

Standard	Performance Indicator	Type of measure
1. Quality of Graduate	<ul style="list-style-type: none"> • Number of graduate entering full time employment and full time further study within one year after graduation • Employee satisfaction • Number of publication from doctoral thesis per total number of doctoral thesis • Number of publication from thesis in master degree per total number of thesis in master degree 	<ul style="list-style-type: none"> • Output • Output • Output • Output
2. Quality of Learning	<ul style="list-style-type: none"> • Learning process development that focuses on learner and real practical experience • Student's opinion on teaching efficiency • Number of activity and project of the student per number of full time equivalent student • Research that is related to learning process 	<ul style="list-style-type: none"> • Process • Process • Output • Output
3. Quality of Learning Support	<ul style="list-style-type: none"> • Staff-student ratio • Operating budget per number of full time equivalent student • Percentage of full time academic staff who hold doctoral degree or equivalent • Number of computer per number of full time equivalent student • Library and computer spending per number of full time equivalent student 	<ul style="list-style-type: none"> • Input/Process • Input/Process • Input/Process • Input/Process • Input/Process

Table 1.1 Standards and performance indicators for higher education

Source: Office for National Education Standards and Quality Assessment (2002)

Standard	Performance Indicator	Type of measure
4. Quality of research	<ul style="list-style-type: none"> • Number of publication and creative work per number of full time academic staff • Number of research that can be used for other research or teaching or industry or country development per number of full time academic staff • External research funding per number of full time academic staff • Internal research funding per number of full time academic staff 	<ul style="list-style-type: none"> • Output • Output • Input • Input
5. Quality of academic service	<ul style="list-style-type: none"> • Number of activity or project that provides academic service to community • Number of academic committee or professional committee or external examiner per number of full time staff 	<ul style="list-style-type: none"> • Output • Output
6. Quality of preservation of art and culture	<ul style="list-style-type: none"> • Number of activity that maintains the preservation of art and culture • Number of activity that creates and develops the standard of the preservation of art and culture 	<ul style="list-style-type: none"> • Output • Output
7. Quality of administration and management	<ul style="list-style-type: none"> • Percentage of salary of staff per total operating expense • Percentage of salary of management staff per total operating expense or number of nonacademic staff per number of full time equivalent student • Percentage of central expense per total operating expense • Depreciation expense per full time equivalent student • Net income per operating expense 	<ul style="list-style-type: none"> • Input/Process • Input/Process • Input/Process • Input/Process • Input/Process
8. Quality of quality assurance system and mechanism	<ul style="list-style-type: none"> • Continuous quality assurance system and mechanism • Effectiveness of internal quality assurance 	<ul style="list-style-type: none"> • Process • Output

Table 1.1 Standards and performance indicators for higher education (continued)

Source: Office for National Education Standards and Quality Assessment (2002)

As a result of this newly established system in quality assurance and also an increasing competition in education industry resulting from liberalisation, each

public university is now under considerable pressure to compete within a universally accepted benchmarking system. One way to ensure that a public university progressing satisfactorily is to apply a performance measurement system that gauges its research and teaching quality and the quality of its facilities together with its staff. This performance measurement system should also incorporate all perspectives from all university stakeholders. It must be evaluated thoroughly as its adoption is a key in allowing a university to maintain its academic excellence and to better compete both locally and internationally.

The literature reviews however reveal that such system is still not in place for a public university in Thailand. Although the ONESQA set up the performance measurement framework for higher education institutes in Thailand, that framework aims only to control the quality of the education after liberisation not to guide a public university to achieve its mission and enable a university to compete in the incoming free market in higher education sector in Thailand. Study of the design of a new performance measurement framework for a public university under the totally new environment after liberisation is rarely reported. This area is obviously not sufficiently explored.

At the present, no public university in Thailand has a model to link measures of quality, such as the one proposed by the ONESQA, to its mission and strategies. The financial management of a university is also still based on traditional budgeting systems that are suitable for the current conditions but certainly not for the new situation of the increasing competition in the market.

A review of current performance measurement frameworks that are widely adopted in Thailand and in other countries shows that both the Economic Value Added (EVA®¹) and the Balanced Scorecard are widely used in many organisations (Minchington and Francis, 2000). They are used to diagnose and control an organisation's performance. EVA®, described as the size of the economic profit generated in a given year over and above what investors could have received in

¹ EVA® is a registered trademark of Stern Stewart & Co.

market, can be used to measure whether organisation is creating value. Thus EVA® is a measure that reflects on the efficiency or profitability of business. On the other hand, the Balanced Scorecard, which is a management tool that supports the strategic implementation, recognises the need to identify and track a number of non-financial measures to provide a broader view of business. Thus these two techniques are the main candidates of the new performance measurement model for public university in Thailand. They enable the organisation to achieve the mission and also efficiently manage its financial resources in order to survive under the incoming liberisation of the sector. These two models can help university achieve greater success in current dynamic and competitive business environment.

Although very popular in the business world, EVA® and the Balanced Scorecard are applied less in the educational sector in Thailand. At present, most management techniques used in a public university are based on the government budgeting system. However, the public university is in the process of becoming autonomous. The environment will be significantly changed, so it is worth investigating the benefits of new management tools for a university by applying the concepts of EVA® and the Balanced Scorecard to public university in Thailand.

As a result, this thesis attempts to integrate the concepts of EVA® and the Balanced Scorecard into a new performance measurement model for public university in Thailand. The study focuses on the process of design of the new model by investigating university structure and culture, the existing performance measurement, and the perception of university stakeholders on the use of EVA® and the Balanced Scorecard for a university. The new model is then compared with models currently applied in other universities. The perception of staff on the implementation of this model is also investigated. The contribution of this thesis is therefore the new performance measurement model, which is the integration of these two techniques, EVA® and the Balanced Scorecard that can be applied in all public universities with the proper implementation strategies.

This thesis discusses the issue of appropriate performance measurement system for public university in Thailand over ten chapters. In Chapter Two, the concept of performance measurement is explored. This includes a definition and development

of management concepts, definition of performance measurement, a functional analysis, theoretical foundations, frameworks, methodologies, and practical applications, of performance measurement and performance measurement in higher education. This chapter attempts to present broad view of the importance of performance measurement systems.

In Chapter Three, the conceptual issues relating to EVA® are considered. The chapter begins with the exploration of traditional financial metrics. The concept of EVA® is then introduced. This includes the definition, application, and the uses and limitations of EVA®. EVA® for not-for-profit organisation is then presented at the end of the chapter.

The concept of the Balanced Scorecard is introduced in Chapter Four. This chapter starts with a description of the Balanced Scorecard framework and methodology. The implementation of the Balanced Scorecard is also described in this chapter, followed by its uses and limitations. Finally this chapter addresses the uses of this management technique in a not-for-profit organisation.

In Chapter Five, the history of the higher education system in Thailand is reviewed to provide a board picture of the development of the higher education sector in Thailand. Current situations of the university system in Thailand are also described. The process of quality assurance in Thailand is explored and discussed in detail. At the end of the chapter, culture in a Thai university is also critically examined with the models of managing change strategies: intervention strategy model and organisation development model.

The scope of the work and research methodology are presented in Chapter Six. The chapter begins with the reviews of various perspectives in management research. Then the scope of work including objectives of the study and research questions, is described. Theoretical and analytical frameworks are then critically discussed. Research methods used in this study, the case study research and the survey research are further discussed in detail. The strengths and limitations of methods used in this study are also compared to other alternatives. The data collection methods, interview and questionnaire, are described at the end of the chapter.

Chapter Seven presents the results obtained from the case study research. The chapter begins with the background of the case followed by data analyses. These are structured into four sections which consider the organisation structure and culture, the existing performance measurement, the use of EVA®, and the use of the Balanced Scorecard. The findings of the study obtained from data analyses are then concluded. At the end of this chapter, the reliability and validity of this case study research are discussed in detail.

The information obtained from Chapter Seven is used as a basis of the design of the new performance measurement model that is further described in Chapter Eight. The process of the design of the new model is explored. The concept of EVA® and the Balanced Scorecard is integrated and a strategy map is then developed.

In Chapter Nine, the proposed model is compared to the other models currently applied in other universities. The perception of staff on the new model is investigated in the survey research and the data analyses are reported and discussed in this chapter. The perceived value of EVA® and the Balanced Scorecard is also discussed. Finally the quality of the survey, including the reliability and validity of the survey research, is discussed in detail.

The last chapter, Chapter Ten, concludes all contents in the thesis. The statement of problems is reviewed. The results obtained from the case study research and the survey research are then summarised. The original contribution to knowledge is also critically discussed. The generalisation of the results and limitations of the study are also included in this chapter. Finally the future development and impact of the study on the development of performance measurement of the public university in Thailand are presented at the end of the chapter.

CHAPTER TWO: PERFORMANCE MEASUREMENT

This chapter aims to review the concept of performance measurement. Topics covered in this chapter include the development of management concepts, the definition of performance measurement, functional analysis, theoretical foundations, frameworks, methodologies, practical applications of performance measurement. The sections presented in this chapter are therefore as follows.

1. *Definitions and development of management concepts.* In this section, the term ‘management’ is defined and previous management concepts are explored in order to provide a basis to develop a performance measurement framework built upon, and integrating to these previous management concepts.
2. *Definition of performance measurement.* This section attempts to explain the meaning of performance measurement in various contexts.
3. *Functional analysis of performance measurement.* The outlines of performance measurement in different perspectives are presented and discussed in this section.
4. *Theoretical foundations, frameworks, and methodologies of performance measurement.* In this section, various performance measurement frameworks are reviewed and discussed.
5. *Practical applications of performance measurement.* This section explains how performance measurement systems are implemented in industry and suggests the way to improve performance measurement system in rapidly changing environment
6. *Performance measurement in higher education.* In this section, the performance measurement system being applied in higher education institutions are explored and discussed.

2.1 Definitions and the development of management concepts

Before exploring what performance measurement is, it is worth investigating definitions of management and the development of existing management philosophies in order to better understand how current developments in performance measurement are built upon and its connection to existing concepts.

There are many views about the meaning of management. In The Oxford Dictionary of Current English (2001:547), 'management' is defined as 'the action of managing'. The term 'manage' refers to '1 be in charge of (an organization or people). 2 succeed in doing...3 be able to cope despite difficulties. 4 control the use of (money or other resources). 5 be free to attend (an appointment) (The Oxford Dictionary of Current English, 2001:547). In a business context, management can be classified into five views (Easterby-Smith et al. 2002:4-7).

1. *Classical view*: In this view, management is defined as 'functional activities' in various disciplines such as finance, marketing, and operations. In this perspective, the main responsibilities of manager are to plan, organise, co-ordinate, and control.
2. *Decision theory*: Management in this perspective is more related to 'optimising decisions'. In this view, the importance of techniques used to analyse the environment within which decisions must be made is emphasised. The management technique used in this perspective is largely quantitative.
3. *Work activity*: Unlike the previous two perspectives, in this perspective, the management definition is human-oriented. More emphasis is placed on 'actual managerial behaviour'.
4. *Competencies*: In line with the work activity perspective, management in this view is described as 'skills required for effective performance'. Managers need to possess the set of skills such as leadership and collective vision, which is required for effective managerial work.

5. *Critical*: In the final and most recent view, management is regarded as ‘social construction and political role’. In this perspective, management involves the attempt to deal with ‘ambiguous and complex situations through conversations and dialogue’ (Easterby-Smith et al. 2002:6 cited Shotter, 1993; Pye, 1995; Weick, 1995)

According to these views of management, management concepts have been developed since the early of twentieth century. These previous management philosophies can be summarised in Table 2.1.

Time period	Concept	Concentration	Main contributors
1900 - 1920	Scientific Management	Time and motion	Frederick W. Taylor
1920 - 1930	Bureaucracy, administration	Rule sets, process approach	Max Weber, Henri Fayol
1930 - 1950	Human Relations	Hawthorne experiment	Elton Mayo
1950 – 1960	Motivation	Hierarchy of needs	Abraham Maslow
1960 – 1970	Management by Objective (MBO)	Main focus on organisation’s objective	Peter F. Drucker
1970 – 1990	Total Quality Management (TQM)	Measures of quality and process	William Edwards Deming
1980 – 1990	Managing Change/ Business Process Reengineering	Change management, fundamental process redesign	Rosabeth Moss Kanter, Charles Handy Michael Hammer
1990 – 2000	Performance Measurement and the Balanced Scorecard	Comprehensive set of measures with strategy at the centre	Robert Kaplan and David Norton

Table 2.1 The development of major management philosophies

In the early 1910s, Frederick W. Taylor proposed the concept of scientific study of work. Taylor ‘systematizes the study of workflow organisation by breaking tasks into minute detail and devising ways to speed up accomplishment’ (Warner, 1998:656). His main principles of scientific management were: ‘(1) to establish a science of production; (2) to select and train workers to achieve this; (3) to apply such a science to operatives’ tasks; and (4) to build cooperation between the workers and management to achieve common goals’ (Warner, 1998:659). Nevertheless, his concept has been criticised on too narrow a view of work; the time study is ‘the

ignorance of the physical and mental functioning of the organism and its own demands' (Friedmann, 1955:64-5).

In 1920s, the concept of bureaucracy and universalism gained popularity. Max Weber 'has been best known for this work in bureaucracy' (Ritzer, 1998:731). This concept was developed because of the increasing needs for consistency. The idea is to distribute activities to fixed official duties and all activities follow the hierarchy of the organisation. There are many rule sets and official operate in formal style. During the same period, the concept of administration was also proposed by Henri Fayol. Although Fayol and Taylor adopt the mechanistic approach to organisation, Fayol's approach is found to be more amenable to adaptation than those of Taylor (Campbell, 1998:185). Fayol proposed five management activities, which are planning, organising, commanding, coordinating, and controlling. According to his work, it is believed that there is 'a universal science of management' (Campbell, 1998:187).

After the rise and fall of labor-intensive mass production, the concept of scientific management is now less popular as it treats workers as unthinking robots and the role of manager does not go beyond holding the stopwatch measuring tasks performed by workers. Taylor emphasises only 'quantity rather than quality, something which is increasingly out of line with today's management practice' (Crainer, 1996:4). As a result, in 1930s, the human relations school emerged in the United States (Crainer, 1996:110). Human relations school recognises the human side of the organisation. Perhaps the start of this concept began with the Hawthorne Studies, which revealed that how managers behave was very important to employee's performance. Elton Mayo was believed to be 'the most passionate advocate of the Hawthorne Studies' (Crainer, 1996:109). He argued that self-esteem was important to the performance and the efficient communication between workers and management was vital for achievement of organisation's goal.

Following the work of Mayo, Abraham Maslow developed a hierarchy of needs, which consists of biological, safety, socialization, self-esteem, and self-actualisation (Maslow, 1943, 1954). Maslow believed that people are no longer motivated once a level of need in hierarchy is satisfied. In 1954, Peter F. Drucker, who can perhaps 'best be described as emphasising a humanistic approach to management' (Witzel,

1998a:160), introduced the concept of management by objectives (MBO) (Drucker, 1954). MBO encourages managers to determine the business's objectives, plan how to achieve those objectives efficiently, and lastly implement that plan. As the plan is implemented, MBO requires that the organisation should measure its performance in order to ensure that the organisation is on the right path toward its objectives. The plan should be adapted or reviewed if the results of performance measures indicate that it no longer leads in the right direction (Hindle, 2000:141). However Drucker is not without his critics. The concept of MBO is criticised as it overemphasises the plan, especially when it does not lead towards its objective. Many organisations prefer vague objectives to be more rigid, as proposed in MBO (Hindle, 2000:142). Even Drucker himself downplays the significance of MBO by stating that MBO is not the great cure for management inefficiency. It only works when managers know the objectives, which is not always the case.

After the fall of MBO, the focus then turned to the quality management. The concept of total quality management (TQM) was developed inside a number of Japanese firms (Hindle, 2000:225). Deming is widely recognised as the founder of this concept although he was heavily influenced by other experts particularly Joseph Juran and Walter Shewart (Oliver and Wilkinson, 1992). TQM is the 'management of an entire organisation so that it excels in all aspects of products and services that are important to the customer' (Heizer and Render, 2004:193). It is 'a process-oriented system built on the belief that quality is simply a matter of conforming to the customer's requirements' (Hindle, 2000:225). The concept of TQM was popular in Japan at that time despite the fact that two TQM gurus, Deming and Juran, are American. This concept helped Japan to rebuild its economy after World War II, and to become one of the world leaders in business today. However the fact that a quality revolution did not take place in the United States in 1960s and 1970s does not mean that the quality of the US products was declining. The rate of progressing made by the Japanese who adopted TQM was simply much faster. The result was that 'Japanese companies caught up with and overtook their Western competitors' (Dickson, 1995:198) since then. The concept of TQM was later reclaimed in the US and widely adopted by American corporations. However there are some unsuccessful stories of TQM implementations in the US. One possible answer to the failure of TQM in the US is the difference in culture of two countries. American companies saw no reason to

change given that their products were believed to be better than those of the Japanese (Dickson, 1995). The rapid diffusion of TQM in Japan raised question of the extent to which the idea fits more easily with the Japanese culture that accepts teamwork, consensus decision making, and employee involvement. This contrasts to the American business where short-term profits are very important, given that many companies are more dependent in a stock market which values short-term earnings more than long-term growth (Dickson, 1995).

The failure of TQM in practice is increasingly evidenced by research. Juran, one of TQM experts, found that fewer than 10% of top 500 US attain world class quality (Juran, 1993). A survey in United Kingdom also suggests that the majority of companies implementing TQM programmes found results disappointing, concluding that implementation is at fault (Dickson, 1995).

This raises the question of how to implement such programme or any other initiatives successfully in the organisation. Good change management is obviously required and was on agenda in 1980s. Many organisations concluded that ‘managing change is a vital ingredient in their future success’ (Cunningham, 1995:26). Rosabeth Moss Kanter from Harvard University is probably ‘best known for her work on change management’ (Hindle, 2000:30). Her book, *The Change Masters* (Kanter, 1983), states that corporations are unused to managing innovation, and suggests that climate and communication is the key to create a situation where innovation can flourish. Her work focuses on both ‘the need of organizations to adapt to change and the role of the individual in creating change’ (Witzel, 1998c:344). Charles Handy is an other guru in managing change. In his famous work, *Understanding Organizations* (Handy, 1976), he identifies four types of culture in the organisations: power, role, task, and person culture. His ideal-type of organisation ‘would have room for all these cultures within it, reflecting the diverse nature of the groups and individuals involved’ (Witzel, 1998b:276). His work drives towards change, and searches for ‘a world in which change and flux are normal and accepted’ (Witzel, 1998b:277).

There are two approaches of change that organisation can choose: incremental change and quantum leaps. These two approaches need different tactics. TQM proponents generally support incremental change and continuous improvement, while the others

push for the large scale change because they believe that organisation does not have enough 'time to wait for the impact of incremental change' (Cunningham, 1995:28). Following failures in TQM practices, managers have turned to the radical change approach. In the late 1980s and the early 1990s, the concept of re-engineering has emerged, which reflects the belief that, although the continuous improvement of TQM is important, it is not enough (Crainer and Obeng, 1995). The idea of re-engineering was first published by Professor Michael Hammer in the article in the *Harvard Business Review* in 1990 (Hammer, 1990) followed by his international bestseller book co-authored with James Champy, *Re-engineering the Corporation*, in 1993 (Champy and Hammer, 1993). The term 're-engineering' is described as a fundamental rethinking of recognising and breaking away from the outdated rules and fundamental assumptions that underlie operations. The re-engineering requires looking at the fundamental processes of the business from cross-functional perspective. It strives for significant levels of improvement (Champy and Hammer, 1993). This method is also referred to as business process re-engineering (BPR). The BPR was reported as being implemented with considerable success by a number of large corporations during the early 1990s. However by the mid 1990s, the several faults had emerged in the idea. One of these faults is that the BPR represents something that 'managers are only too happy to impose on others but not on themselves' (Hindle, 2000:186). The concept of the re-engineering is now seen by some as the return of the Taylorism itself, dating back to 1910. The most serious criticism of the BPR is its neglect of people and this omission is probably the main cause of decline in its popularity by 1997 (Jones, 1998).

It is interesting to observe the rise and fall of management ideas during the past century. Taylorism focuses on science of management and is criticised on its ignorance of human's thinking and behaviour. Management by objective (MBO) then emerges to change 'attitudes away from scientific management towards a more philosophical approach in which management can be reduced to a series of generic tasks and in which goals are of greater importance than functions' (Witzel, 1998a:160). This concept is however criticised as it involves too much in planning, and results in unproductive behaviour. After the fall of MBO, the focus then turns to quality management. The concept of TQM is renowned as it helped to rebuild the Japanese economy. Its practices were also introduced in the western world and

success was reported for sometime until there was increasing evidence of poor success because of the poor implementation and the resistance to change. The concept of change management then comes into the picture. The concept of re-engineering is very popular in the late 1980s and the early 1990s and again its popularity is declining during the mid 1990s because it is criticised of being the return of Taylorism, when people is neglected.

The cycle of rise and fall of two main distinctive philosophies of management; scientific and human-centred management, probably drives the new management idea of performance measurement and management. In the early 1990s, Kaplan and Norton proposed the idea of the Balanced Scorecard. This seeks a balance between short-term and long-term objectives of the financial and nonfinancial measures, and seek to identify leading and lagging indicators in four main perspectives namely the financial, customer, internal business process, and learning and growth. The Balanced Scorecard has been increasingly popular since then, probably because it embraces previous management ideas into its framework. Implementing the Balanced Scorecard does not preclude the use of other management frameworks, it is perfectly consistent with TQM principles and even adds two enhancements (Kaplan and Norton, 2001:376). Firstly it ensures that the improvement obtained from implementing TQM is most critical to strategic success and secondly it ensures that TQM programme success leads to better financial outcomes, something that does not always happen when a TQM programme is implemented alone.

The Balanced Scorecard is also consistent with the re-engineering principle as it ensures that dramatic change resulting from a re-engineering programme is critical for strategic success (Kaplan and Norton, 2001:377). It can be argued that previous management frameworks focused only on one or two perspectives in the Balanced Scorecard. Scientific management obviously focuses on the internal business process. MBO mainly focuses on the objectives of the organisation, which are usually the financial ones. TQM and re-engineering are mainly about the internal process and customer. The concept of managing change deals with the softer issue and is more related to the learning and growth perspective. The Balanced Scorecard puts together all aspects of the previous management frameworks into a more comprehensive view of management, and places strategy at the centre.

Since the rise of popularity of the Balanced Scorecard, the concept of performance measurement has been widely recognised. Increasingly, there is significant concern with performance. Many organisations have used performance measurement systems to seek ways to understand their performance. Performance measurement has been used as a management tool in both private and public sectors. It is used to determine the effectiveness and efficiency of service or product systems, and to highlight strengths and areas for improvement. The challenge for organisations today is how to match and align performance measures with business strategy and organisation structures and culture. Other important issues include a balance between the benefits and costs of applying these measures, the number and type of measures, and how to apply the measures so that the results are utilised in the best way. To address this challenge, organisations are advised to apply a performance measurement system that provides a methodology for selecting and implementing appropriate performance measures.

Performance measurement is high on the agenda of management thinking. It is estimated that new reports and articles on this topic have been appearing at the rate of one every five hours of every working day since 1994 and there are more than 12 millions websites dedicated to it comparing to under 200,000 in 1997 (Neely, 2002:xi). There are many conferences, seminars, and training workshops on this topic. Many companies spend considerable effort to investigate and implement performance measurement systems. Some succeed while others fail. Before further exploring details of performance measurement framework for both for-profit and not-for-profit organisations, the next section will discuss the definition of performance measurement.

2.2 Definition of performance measurement

Performance measurement consists of two words ‘performance’ and ‘measurement’. Therefore, considering the definitions of these words will help understand the term ‘performance measurement’.

A review of dictionaries shows a diversity of meanings in term of ‘performance’. There is list of many connotations, which aims to provide a usable definition of performance. According to Lebas and Euske (2002:67), performance is

‘Measurable by either a number or an expression that allows communication ... ; to accomplish something with a specific intention ... ; the result of an action ... ; the ability to accomplish or the potential for creating a result ... ;the comparison of a result with some benchmark or reference selected - or imposed either internally or externally; a surprising result compared to expectations; acting out, in psychology; a show, in “the performing arts”, that includes both the acting or actions and the result of the actions as well as the observation of the performers by outsiders; a judgment by comparison’.

Lebas and Euske (2002) also propose nine propositions that, taken together, provide answers to the questions of what performance is and how to create it.

- *Proposition 1:* Performance can be a set of parameters that describe the process.
- *Proposition 2:* A causal model that describes how results in the future can be influenced by present action helps understand performance.
- *Proposition 3:* Performance has no objective definition. It is however defined by the user.

- *Preposition 4:* Performance has different meanings depending on whether it is defined from inside or outside organisation.
- *Preposition 5:* Performance is always connected to responsibility
- *Preposition 6:* If outcomes or results cannot be described or measured, there will be no performance.
- *Preposition 7:* The causal model needs to be validated continuously.
- *Preposition 8:* What performance indicators or measures partially describe should not be confused with indicators or measures themselves.
- *Preposition 9:* Performance is only a relative term. Judgment and interpretation are required.

On the other hand, the word ‘measurement’ means ‘the action of measuring; an amount, size, or extent found by measuring; a standard unit used in measuring’ (The Oxford Dictionary of Current English, 2001: 559).

A typical definition of ‘measure’ includes a specific goal or objective, data requirement, the calculation methodology, including required equations and precise definition of key terms. The reports in which the data and the graphic presentation will appear are eventually used to display the data.

Putting these together, performance measurement can refer to quantifiable indicators that can inform decision makers whether a particular objective is achieved. Such measures can be in form of input, process, and output measures.

An alternate, performance measurement system refers to

‘The set of processes an organisation uses to manage its strategy implementation, communicate its position and progress, and influence its employees’ behaviours and actions. It requires the identification of strategic objectives, multidimensional performance measures, targets and the development of a supporting infrastructure.’ (Franco-Santos et al. 2004:401)

In the strategic context, performance measurement is the process that an organisation applies to make an assessment of organisations status. A performance measurement system has a number of constituent parts as follows (Kennerley and Neely, 2002:145).

- ‘Individual measures that quantify the efficiency and effectiveness of actions;
- A set of measures that combine to assess the performance of an organisation as a whole;
- A supporting infrastructure that enables data to be acquired, collated, sorted, analysed, interpreted, and disseminated.’

In order to exploit the full benefits of a performance measurement system, an organisation has to maximise the appropriateness and effectiveness of measurement activity at each of these levels (Kennerley and Neely, 2002:145). This can be done by applying appropriate frameworks which will be described later in this chapter.

Performance measurement is fundamental to an organisational improvement. All organisations measure performance to some extent although there is a large disparity among organisations in terms of how and which performance measures are used. These organisations design performance measurement systems to ensure that measures are aligned to strategy, and that the system is working effectively in monitoring, communicating, and driving performance.

It can be argued that performance measurement is used to set goals and standards, detect and correct problems, manage, describe, and improve processes. In general, a good performance measurement system should be accepted by all stakeholders. It should be able to inform how well goals and objectives are being met. It should also

be simple, understandable, logical, and repeatable. Furthermore good performance measurement must show trends, and be unambiguously defined. Finally it should be timely and sensitive. In order to have successful performance measurement, an organisation must create a system that comprises a balanced set of a limited number of vital measures (Murray and Richardson, 2002), produces timely and useful reports at a reasonable cost, displays and makes readily available information that is shared, understood, and used by an organisation. Furthermore a successful performance measurement system must support an organisation's values and the relationship between all organisation stakeholders, including customers, consumers, employees, suppliers, local community stakeholders, and shareholders.

Although the importance of performance measurement has increased with the realisation that to be successful in the long-term requires measuring performance against all stakeholders' needs, critics of a system of performance measurement often state that the importance of performance measurement is difficult to quantify. Furthermore the work that one organisation completes cannot be measured because it is subjective rather than objective, and the resulting system cannot be compared to that of anyone else, as their operations are different.

The challenge of establishing good performance measurement is therefore to permit valid comparison. Performance cannot be judged in absolute terms. It is aimed at providing useful information on trends and alternative process systems. Performance measurement is thus a way of identifying the impact of a change in processes.

There are major prerequisites that an organisation needs when designing an effective performance measurement system. First of all, an organisation must have clearly defined goals or objectives and strategies to reach them (Kaplan and Norton, 1996b). Other requirements include how to find out what measures to choose and why, how to use them or in the other word, what to do with the results, who should be responsible for using the results, and how and to whom to communicate the results.

A clear method of data collection helps identify how much data needs to be collected, the population from which the data will come, and the length of time over which to collect the data. It also helps identify the charts and graphs to be used, the charting

frequency, the type of comparison to be made, and the calculation methodology. If the performance measure is new, it should identify existing or new data sources. It is important to consider that all data sources need to be credible and cost effective.

Performance measures should emphasis the quality of products or services and the outcomes that those products or services produce rather than merely reporting the consumption of inputs. Performance can be measured in many ways. Efficiency measures reflect the ratio between inputs and outcomes while effectiveness measures explain the degree to which the goals are achieved. Performance measures can also assist decision makers in various ways, for example, in budget allocation decisions or in monitoring and improving organisation performance.

2.3 Functional analysis of performance measurement

The diversity of performance measurement brings both challenges and opportunities. Richness in the subject makes it very difficult for researchers to build on the work of others. Researchers with backgrounds as diverse as accounting, operations, or marketing discuss this topic in their own area. Marketers talk to marketers, operations managers meet with operations managers. This results in deep knowledge of functionally specialised research. This part therefore attempts to put together several functionally based reviews of performance measurement, which include the accounting, marketing, and operations perspective.

2.3.1 The accounting perspective

Otley (2002) reviews performance measurement system from an accounting perspective. He argues that in accounting perspective, measurement systems have three following different roles;

- As tools of financial management. Here, financial resources are used to manage the operation of the finance function effectively and efficiently.

- As provider of information on business objectives of organisation. Here financial measures, such as profit, return on assets, return of investment or EVA® are used to measure the level of achievement of organisational objective.
- As a means of motivation and control. Here, financial measures are used to motivate and control staff within organisation.

Otley argues that there may be overlap between these functions. However if a measurement design aimed to fulfil one role is used to fulfil another role it will lead to confusion, and this is a common problem that many academics and practitioners do not even recognise.

2.3.2 The marketing perspective

Clark (2002) provides extensive review of performance measurement in the field of marketing. He argues that unlike early work on marketing measurement, which is concentrated on marketing productivity, more recent developments have focused on:

- Market orientation. Although definitions of this term vary, the common components of being market oriented include systematic gathering, analysis, dissemination, and use of market information within an organisation.
- Customer satisfaction. This is one of most widely used measures of business performance. The basic idea behind this measure is that customers have expectations, whether or not they are satisfied depends on how well consumption experience meets or exceeds those expectations.

- Customer loyalty. Although it may not be as widely used as customer satisfaction, this measure does matter as it affects cash flow. Loyal customers are easier to retain therefore marketing costs are lower. Furthermore loyal customers are less likely to search out information on competitors and more resistant to persuasion efforts by competitors.
- Brand equity. Brand is one of the most important marketing assets a firm can manage. Strong brand allows firm to charge premium price, can be used to extend the company's business into other product categories, and reduces perceived risk to customer.

Clark further argues that the richness of marketing performance measures brings confusion to researchers and practitioners as they struggle to find a set of measures that are comprehensive, accurate and simple enough to be usable.

2.3.3 The operations perspective

Neely and Austin (2002) explore operations performance measurement focused on manufacturing sector and argue that there are three phases of evolution.

- *The past: Pre-1980.* During this period, many countries had to rebuild their manufacturing capacity following the end of the Second World War. The dominant management was rather sale-led than customer-led. As a result, there was a concern with productivity measurement such as labor productivity.
- *The present: 1980s-2000.* Unlike the first phase and due to the success of Japanese economy, there was a concern with how to develop measures consistent with modern manufacturing management. The issue of quality had been on agenda. The measures in this phase included the quality, time, cost, and flexibility.
- *The future: 2000 and beyond.* The key operations management measurement issues are measures for new economy. As businesses in the new economy are

growing rapidly, organisations are doubling in size every few months and constantly changing their strategies, it is important to find the way to measure the success of these organisations in this rapidly changing environment.

The concept of service operations also emerged in the late 1960s (Shafer and Meredith, 1998:24) after the growth of service sector since 1950. During that period, many concepts developed for manufacturing sector were transferred to service sector. However 'only in recent years have service-sector organisation received the same attention from research as had been paid to manufacturers' (Shafer and Meredith, 1998:26).

Neely and Austin also argue that future research is needed in a multi-functional discipline as now academic specialising in operations management is only interested in developing measures for operations, while the others specialising in other area are also interested only in their own area. The cross-disciplinary work is clearly needed.

2.4 Theoretical foundations, frameworks, and methodologies of performance measurement

2.4.1 Theoretical foundations of performance measurement

There are several key theoretical and conceptual issues in the topic of performance measurement. Lebas and Euske (2002) argue that it is difficult to develop theories in this field and suggest that performance should be equated with action taken today, designed to produce required results tomorrow. They also propose 'the performance tree' to illustrate the performance and causal model.

A causal model links action now to results in the future. There are three stages in the causal model; outcome, process, and foundation. Each organisation needs to go through all these stages in order to create performance. Outcomes can be divided into two categories; traditional concepts and other concepts. Accounting income is an example of traditional concepts, which results are valued by owners or stockholders, while environmental acceptability of the firm, labor satisfaction are examples of other concepts, which results are valued by other stakeholders.

The outputs come from product attributes, which is represented as fruits of the tree. These product attributes include price, quality, working condition, service, delivery, flexibility, and innovation. These attributes are basis of customer or stakeholder satisfaction and are consequences of business processes, which are represented as the trunk of the performance tree. The quality of process depends on the quality of 'the soil', which means the competences, brand image awareness, type of training, market intelligence, maintenance policy, negotiation structures, partnerships, customers and supplier relationships, and investment policy.

Austin and Gittell (2002) provide different perspectives of the concept of performance. They ask why individuals and teams perform in situations where they would not be expected to. They firstly identify three basic concepts of measurement systems.

- *Principle 1:* Performance should be clearly defined.
- *Principle 2:* Performance should be accurately measured
- *Principle 3:* Rewards should be linked to performance

However, they further explain why high performance can be achieved even these principles are violated. This leads to conclusion that there are two forms of performance measurement. In the first, performance measurement is used as management control system where performance is connected to extrinsic reward. In the second, performance measurement results in behavioural modification through ambiguity and intrinsic motivation. This can be illustrated in Figure 2.1.

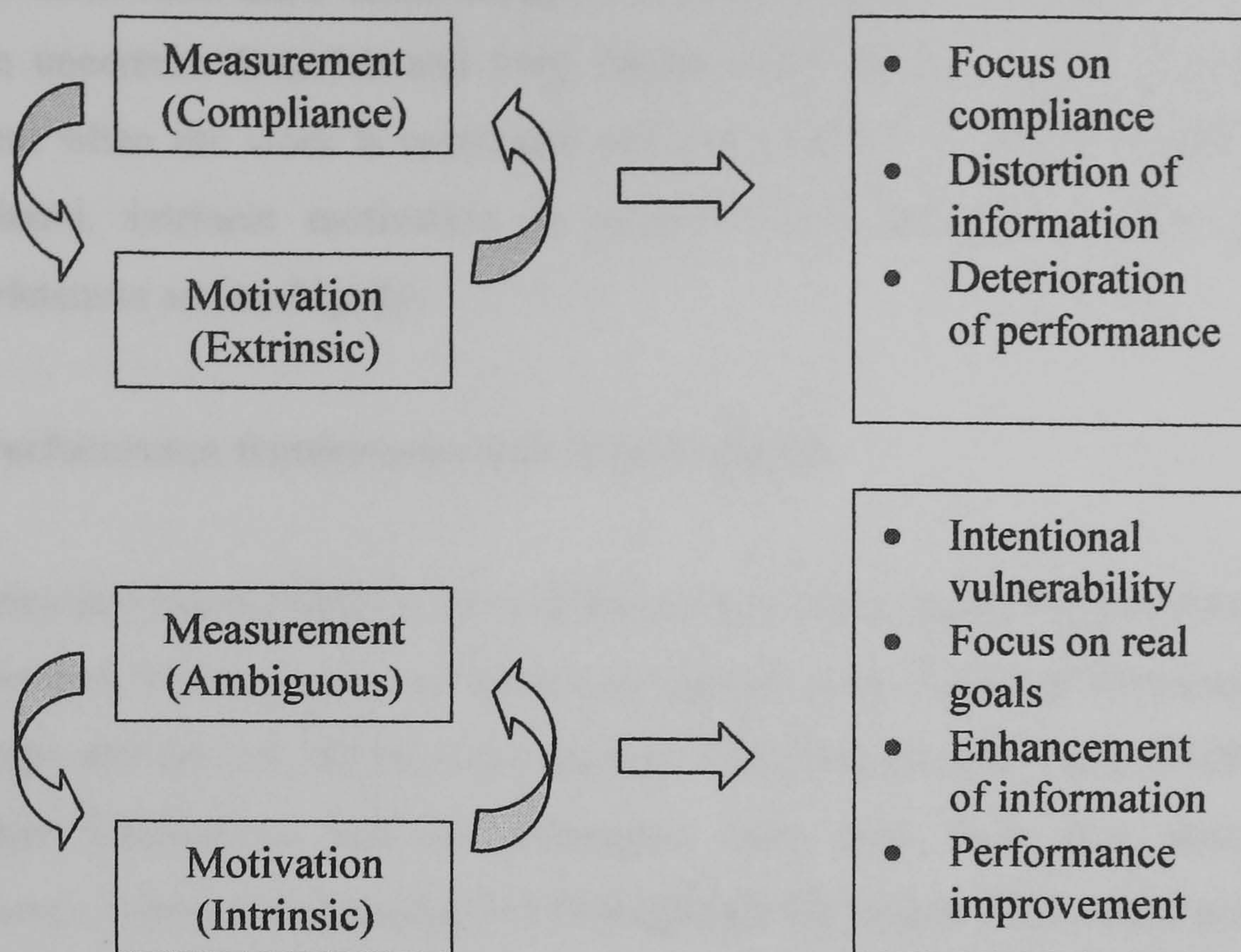


Figure 2.1 Traditional and alternative model of performance measurement
Source: Adapted from Austin and Gittell (2002)

In the traditional model, performance is clearly defined, accurately measured, and rewarded based on the assumption that people are extrinsically motivated. This model tends to focus on compliance. However sometimes it leads to undesired outcomes such as distortion of information and deterioration of performance. On the other hand, in the alternative model, performance is defined only in a general way. It generates intentionally vulnerability, however it enables people to focus on real goals. The information is also enhanced and finally it leads to performance improvement. This alternative model makes use of intrinsic reward to drive performance.

Osterloh and Frey (2002) further investigate whether intrinsic reward is more powerful than extrinsic reward. They find that intrinsic motivation is required whenever extrinsic rewards lead to undesired results. Intrinsic motivation is required for tasks that need creativity and it helps to overcome incomplete contract. This applies where contracts cannot completely specify all relevant aspects of staff behaviour and desired outcomes. Intrinsic motivation can be used to transfer tacit knowledge which cannot be expressed in writing or symbols, so it cannot be measured directly. Without intrinsic motivation, the so-called free ride will happen. However

intrinsic motivation has a disadvantage, it is more difficult to change and the outcome is more uncertain. Osterloh and Frey finally conclude that extrinsic motivation is sufficient when the work is routinised and performance is easy to measure. On the other hand, intrinsic motivation is needed when there is a high degree of incompleteness and ambiguity.

2.4.2 Performance frameworks and methodologies

Kennerley and Neely (2002) reviewed frameworks and methodologies of performance measurement. While, there is considerable interest in the Balanced Scorecard, created by Kaplan and Norton (Kaplan and Norton, 1992; Kaplan and Norton, 1996a), there are other frameworks and methodologies, each with their own strengths and weaknesses. Johnson and Kaplan (1987) highlight the failure of financial performance measures to reflect changes in strategies of modern organisations. They argue that financial measures give little indication of future performance, but only provide a historical view and encourage short termism. The subsequent revolution in performance measurement therefore focuses on a balanced set of performance measures, including both financial and non-financial measures. The Balanced Scorecard integrates and identifies four perspectives of considering performance. These four perspectives are financial, customer, internal business process, and learning and growth. Kaplan and Norton identify the need to ensure that both leading and lagging indicators are given equal weighting. The contribution of the Balanced Scorecard is to link measurement to an organisation's strategy. Kaplan and Norton also argue that the full potential of the Balanced Scorecard will only be realised if organisation links measures clearly. They claim that the Balanced Scorecard will help organisation deduce strategy by reviewing the measures in its Balanced Scorecard. Advantages and disadvantages of the Balanced Scorecard are described later in Chapter Four, which is dedicated only to this topic.

Unlike the Balanced Scorecard, Economic Value Added (EVA®) focuses only on financial results. EVA® is a measure of surplus value created from an investment. It is defined as the net operating profit after subtraction of taxes and the cost of capital tied. It is also called 'the economic profit', which expresses the amount by which

earnings exceed or fall short of the required return that investor can obtain by investing in other alternatives that have comparable risk.

There are two key components in EVA®; the net operating profit after tax (NOPAT) and the capital charge. NOPAT is the profits from operations after taxes, but before financing costs e.g. interest expenses. It is the total profits available to those who invested capital to an organisation. The capital charge is the amount of invested capital times the cost of capital. It is the cash flow required compensating investors for the riskiness of the business given the amount of capital invested. The cost of capital is the minimum rate of return on capital required to compensate debt and equity investors for bearing risk and the invested capital is the amount of cash invested in the business, net of depreciation.

In formula form,

$$\text{EVA}^{\circledR} = \text{Operating Profit} - \text{Capital Charge}$$

$$\text{EVA}^{\circledR} = \text{NOPAT} - (\text{Cost of Capital} \times \text{Invested Capital})$$

According to the Stern Stewart & CO, a management consultant company, who plays a major role in introducing the concept of EVA®, the advantage of EVA® is that it is conceptually simple and easy to explain to non-financial managers. It starts with familiar operating profits and simply deducts a charge for the capital invested in an organisation. By assessing a charge for using capital, EVA® makes managers and staff care about managing assets as well as income, and helps them properly assess the tradeoffs between the two. This broader, more complete view of the economics of a business can make dramatic differences. More details of this concept however will be further investigated in Chapter Three.

Otley (1999) compares the Balanced Scorecard, EVA®, and the budget system in his work. He uses his framework for analysing the management control systems. This framework incorporates five issues, which are objectives, strategies and plans for their attainment, target-setting, incentive and reward structures and information feedback loops. The results are shown in Table 2.2.

Question	Budgetary control	EVA®	The Balanced Scorecard
1. Objectives	Financial objectives: <ul style="list-style-type: none"> • profit; • cash flow; and • return on capital employed (ROCE) 	Single financial objective	Multiple objectives based on strategy
2. Strategies and plans	Means/end relationships not formally considered, although budget is based on a plan of action	Delegated to responsible managers. May be considered when setting targets.	Implicit in selecting some performance measures; no formal procedures suggested.
3. Targets	Best estimates for financial planning; literature on target-setting gives some guideline for control	Some guidance is given with respect to 'inheritance effect'.	Not considered despite being central to 'balanced'.
4. Rewards	Not addressed, despite many rewards now being made contingent upon budget achievement.	Appropriate incentive schemes a central part of the methodology.	Not addressed.
5. Feedback	Short-term feedback of budget variances. Incremental budgeting from year to year.	Some discussion of longer-term impact	Reporting of performance assumed, but no explicit guidance given.

Table 2.2 Comparison of three controls techniques analysed using the performance measurement framework

Source: Otley (1999)

Otley concludes that there is no single technique that has developed answers to all five issues. This framework can therefore be seen as a template against which each practice can be described and assessed. Although this framework provides useful information, it is still questionable in some points. For example, it is indicated that targets are not considered in the Balanced Scorecard, while it is an integral part of the methodology as in each perspective; there are four main components, which are objective, measure, target, and initiative.

There is also another shortcoming in analysing single technique in this way. Although a particular technique does not address all of the five issues, it may be that they are

currently addressed by the other techniques currently applied in an organisation. A more holistic approach is needed. This can be done through a case study of single organisation, which can include a survey.

In addition to the most popular frameworks like the Balanced Scorecard or EVA®, other organisations such as Malcolm Baldrige Quality Award (US) or European Foundation for Quality Management (EFQM) also develop their own performance measurement frameworks. They address many areas of performance including the enablers of performance improvement. They also indicate result areas that should be measured. Despite its broad view, the models developed from these organisations are more subjective rather than objective. The categories for measurement sometimes are too broad.

Kennerley and Neely (2002) also conclude that good performance measurement framework should

- Provide a balanced picture of the business;
- Provide a short but important overview of the organisation's performance;
- Be multi-dimensional.
- Provide comprehensiveness
- Be integrated across the organisations.
- Identify how outcomes are driven by performance drivers.

Kennerley and Neely then propose the alternative framework called 'the performance prism' which includes five perspectives.

- Stakeholder satisfaction perspective to answer the question "*who are our key stakeholders and what do they want and need?*"
- Strategies perspective to answer the question "*what strategies do we have to put in place to satisfy the wants and needs of these key stakeholders?*"
- Processes perspective to answer the question "*what critical processes do we need to operate and enhance these processes?*"

- Capabilities perspective to answer the question “*what capabilities do we need to operate and enhance these processes?*”
- Stakeholder contribution perspective to answer the question “*what contributions do we require from our stakeholders if we are to maintain and develop these capabilities?*”

Kennerley and Neely claim that this alternative framework addresses all shortcomings in existing performance measurement frameworks and provide an integrated framework to view organisation performance. Figure 2.2 demonstrates the way in which the performance prism framework explains outcome, which is stakeholder satisfaction, as a result of drivers, which are the other prism facets.

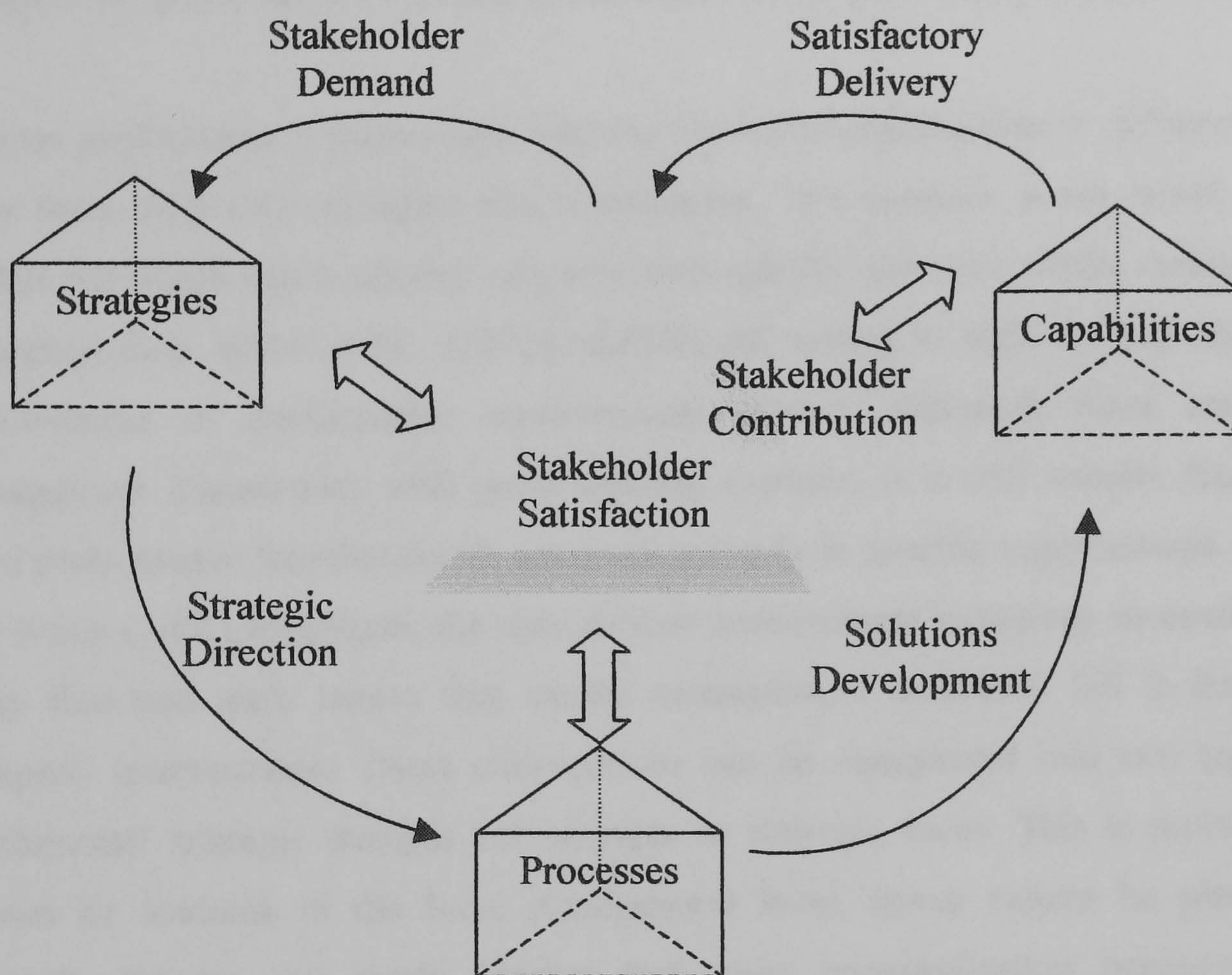


Figure 2.2 Delivering stakeholder value through the performance prism

Source: Adapted from Kennerley and Neely (2002)

Murray and Richardson (2002) argue that recent development of performance measurement frameworks leads to confusion in organisations. Managers now have to manage multiple performance indicators without knowing priorities. They suggest two ways to address this problem. One is to make explicit links between these

indicators through cause-and-effect diagrams. The second is to focus on fewer measures, which is called a '*critical few*'. '*Critical few*' should address the following questions (Murray and Richardson, 2002:171).

1. 'What have we achieved in the past three months on specific issues?
2. What, if anything, has changed in our environment and business that affects our strategic agenda?
3. What do we wish to achieve on our strategic agenda during the next quarter?
4. What few key action items are required to move us forwards?

Murray and Richardson also conclude that creating a '*critical few*' can help management teams define, address, and monitor the problems in an organisation.

Various performance measurement frameworks assist organisation in different ways. They have their own strengths and weaknesses. The question is not which one is perfect but which one is applied properly with specific situation within various types of organisation. Bititci et al. (2002) establish the system to audit the efficiency and effectiveness of performance measurement system. Although there are many management frameworks with good auditing systems, it is still usually found that good performance frameworks do not work properly in specific organisations. Bourne and Neely (2002) investigate the reasons that measurement initiatives succeed or fail. They find that main reason that causes measurement initiatives fail is the parent company interventions. These interventions can be categorised into two types; the fundamental strategic changes and changes in strategic focus. This is problem that cannot be foreseen at the local management level, hence cannot be planned in advance. Bourne and Neely suggest that close communication between parent company and subsidiary is obviously needed. This will allow local managers to know parent companies initiatives early enough to change their management practices.

2.5 Practical applications of performance measurement

Until now we have focused largely on measurement theories and frameworks. This part focuses exclusively on practical applications of performance measurement.

Mayle et al. (2002) gathered information from 726 organisations in UK in the topic of benchmarking. They find wide spread interest in benchmarking across wide variety of industrial sectors and sizes of organisation. The benchmarking activity by sector can be shown in Table 2.3.

Description	Total Number	Number claiming to be benchmarking	
Government	55	32	(58%)
Education	37	23	(62%)
Health	52	36	(69%)
Manufacturing and construction	269	135	(50%)
Financial services	57	19	(33%)
Services and retailing	189	68	(36%)
Utilities	18	14	(78%)
Other	49	19	(39%)
Total	726	346	(48%)

Table 2.3 Benchmarking activities by sector

Source: Mayle et al. (2002)

From the table, it can easily be seen that almost half of all organisations claim that they are using benchmarking, and it seems to be popular among public sector (government, education, health, and utilities). This is not surprising because there is an increase in the political emphasis on league tables in United Kingdom. Mayle et al. (2002) also investigate why these organisations use benchmarking, and find that they use it to focus on areas for improvement (38%), determine place in league table (23%), set targets (22%), construct a framework for improvement (11%), search for a source of new ideas (3%), and for other reasons (3%). When asked which performance measurement framework the organisations are implementing, organisations claim that they are using quality management systems (59%), investors in people (47%), total quality management (37%), business process engineering (31%), activity-based costing (28%), and other frameworks (18%). 10% of organisations claim that they do not implement any of frameworks asked in this study.

Surprisingly, the popular framework like the Balanced Scorecard does not appear on the list. This perhaps due to the fact that the Balanced Scorecard is not selected to be one of possible answers in questionnaires or the concept of the Balanced Scorecard is implicitly categorised within one of possible answers appeared on the list such as quality management system.

Ambler and Kokkinaki (2002) investigate marketing performance measurement frameworks by using both qualitative and quantitative research approaches. In their qualitative study, forty-four in-depth interviews were conducted with marketing and finance executives from twenty-four British organisations. The issues addressed include the type of measures collected, the level of review of these measures, the assessment of the marketing asset, planning and benchmarking, practitioners' satisfaction with their measurement processes and their opinions on measurement aspects. Based on the results from these interviews, performance measures are classified into six categories (Ambler and Kokkinaki, 2002:231).

1. 'Financial, e.g., sales volume or turnover, profit contribution, return of capital;
2. Competitive market, e.g., market share, share of voice, relative price, share of promotions;
3. Consumer behaviour, e.g., penetration or number of users or consumers, users or consumers loyalty, user gains or losses;
4. Consumer intermediate being thoughts and feelings, e.g., awareness, attitudes, satisfaction, commitment, buying intentions, perceived quality;
5. Direct trade customer, e.g., distribution or availability, customer profitability, satisfaction, service quality;
6. Innovation, e.g., number of new products or services, revenue generated from new products or services as percentage of sales'.

Ambler and Kokkinaki then use these six types of measures to form model of performance measures in marketing perspective as shown in Figure 2.3.

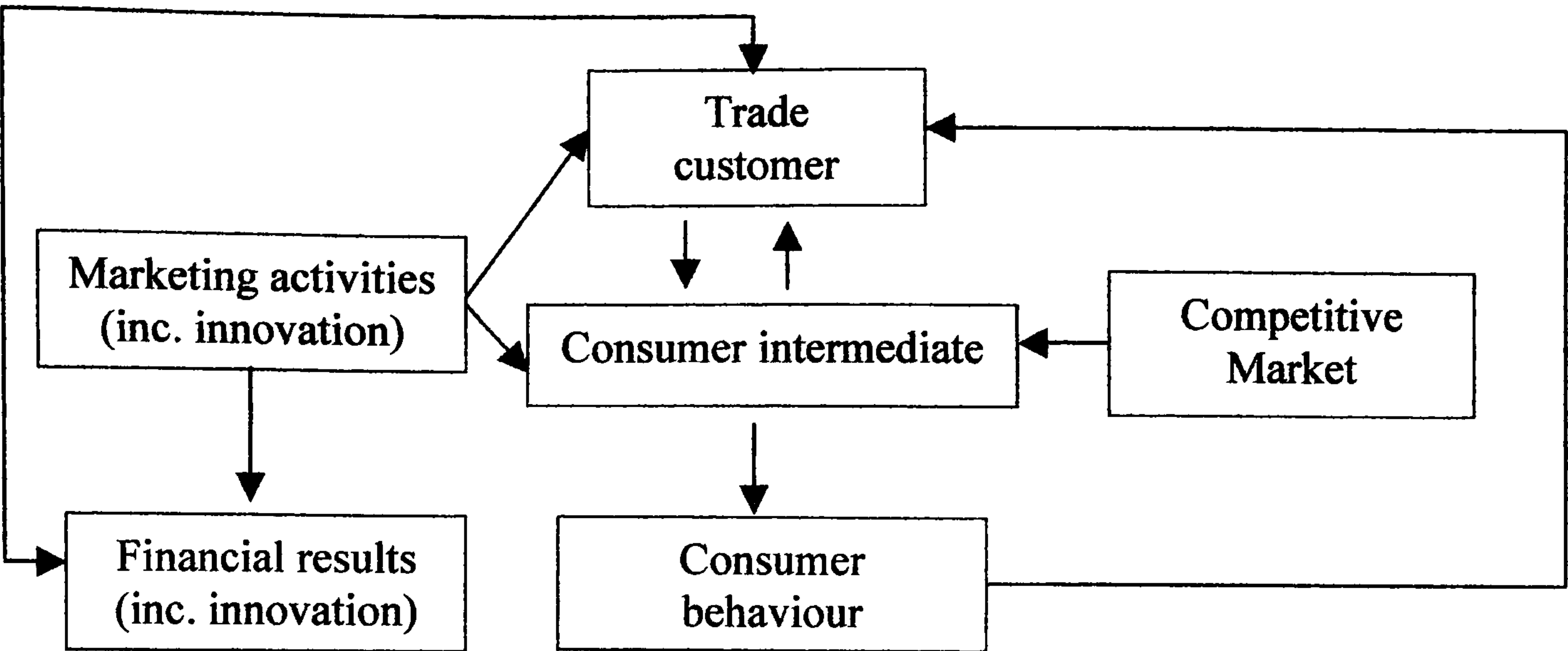


Figure 2.3 Model of marketing performance measures

Source: Adapted from Ambler and Kokkinaki (2002)

In this model, it can be seen that marketing activities drive both trade customer and consumer intermediate (what consumer thinks). Then these two drive consumer behaviour, which in turn feeds back to trade customer response and finally drives financial results.

The results also indicate the key measures employed for assessing marketing performance. The results from Table 2.4 show that financial measures are the most frequently mentioned following by measures related to consumer or end-user.

Performance measures	Marketers (n = 26)	Finance (n = 18)
Finance or shareholder	71	48
Consumer or end-user	50	17
Campaign effectiveness	17	3
Competitor (share)	19	13
Immediate trade customer	9	2
Product performance and logistics	9	6
Employee attitudes	2	1
Econometric models	2	-
Total	179	90

Table 2.4 Key measures employed for assessing marketing performance

Source: Ambler and Kokkinaki (2002)

Ambler and Kokkinaki also conduct quantitative research by sending questionnaires to marketing and finance senior executives. While academic community assumes that the most important marketing metrics are sales and sales growth, market share, profit contribution, and customer preference, the results however indicate that the primary focus is on financial measures, which are also in a plan and seen more often.

Although it seems that organisations tend to adopt performance measurement frameworks in order to use them as control systems, Ahrens and Chapman (2002) find that a ‘loosely coupled’ performance measurement system works in specific circumstances. They propose two context dimensions of performance measurement systems. The first dimension is the degree of local customisation of product delivery, while the second dimension is the degree of looseness of the metric-operational response link. These two dimensions can be illustrated in Figure 2.4.

		Use of performance measurement: Loosenesses of the metric-operational response link	
		Low	High
Local customisation of product delivery	Low	1. Programmed standardisation (commodity) e.g., fast food restaurant chain	2. Individual standardisation (poor administration)
	High	3. Programmed customisation (mass- customisation) e.g., financial services	4. Individual customisation (tailored product) e.g., full service restaurant

Figure 2.4 Two context dimensions of performance measurement systems
Source: Adapted from Ahrens and Chapman (2002)

Ahrens and Chapman suggest that under conditions that favor local customisation of product delivery, loose coupling in performance measurement may play an important role. This is the situation in quadrant 4 in Figure 2.4. It helps avoid wasting investment in formal decision under rapidly changing environment. It also helps bring about positive discussion of organisational priorities and how to manage resources to achieve them.

Although the performance measurement frameworks are widely used in for-profit organisation, not-for-profit organisations are also interested in some of these

frameworks. Although the concept is similar, performance measurement systems must be adapted to suit not-for-profit organisations as their nature differs from business corporations. Ogata and Goodkey, (2002) describe the performance measurement system for government agency. They identify four performance measurement system design principles. These principles include political leadership, citizen feedback, strategic plan, and integrating mechanism. Table 2.5 illustrates a list of key system design factors based on a variety of sources. All these design elements should be taken into consideration when the performance measurement system is designed for a not-for-profit organisation.

Dimension	Factor	Design elements
Environment	Political climate (public)	Public willingness to accept change (crisis climate). Public or stakeholder demands for increased accountability.
	Leadership	Top-level support including ‘political’ champion for the process.
Framework (system architecture)	Vision	System designed to provide information: to improve programme performance to improve planning and decision making to improve accountability
	Strategic planning	Define mission, goals and strategies. Measurement is part of larger managing for results process. Define logic chain of how strategies will influence outcomes and thereby achieve goals.
	Responsibility and accountability	Identify parties responsible for specific outcomes. ‘Contract’ with delivery agents for the achievement of results. Organisational buy-in by programme staff and managers.
Culture	Client centered service delivery	Consult with clients or public or stakeholders. Desired outcomes are consistent with client needs. Report on performance in user-friendly terms.
	High performing organisation	Focus is on learning and results, not punishment. Information used to facilitate planning and resource allocation. Information supports decision-making process. Need to have data analysed or interpreted to identify required action.

Table 2.5 System design elements for not-for-profit organisation

Source: Adapted from Ogata and Goodkey (2002)

Beckett-Camarata and Camarata (2000) also propose an integrative model for performance measurement in not-for-profit organisation. Their model attempts to answer two questions; how is a performance measurement system successfully implemented in a not-for-profit organisation and why is this implementation is important? Their model is illustrated in Figure 2.5.

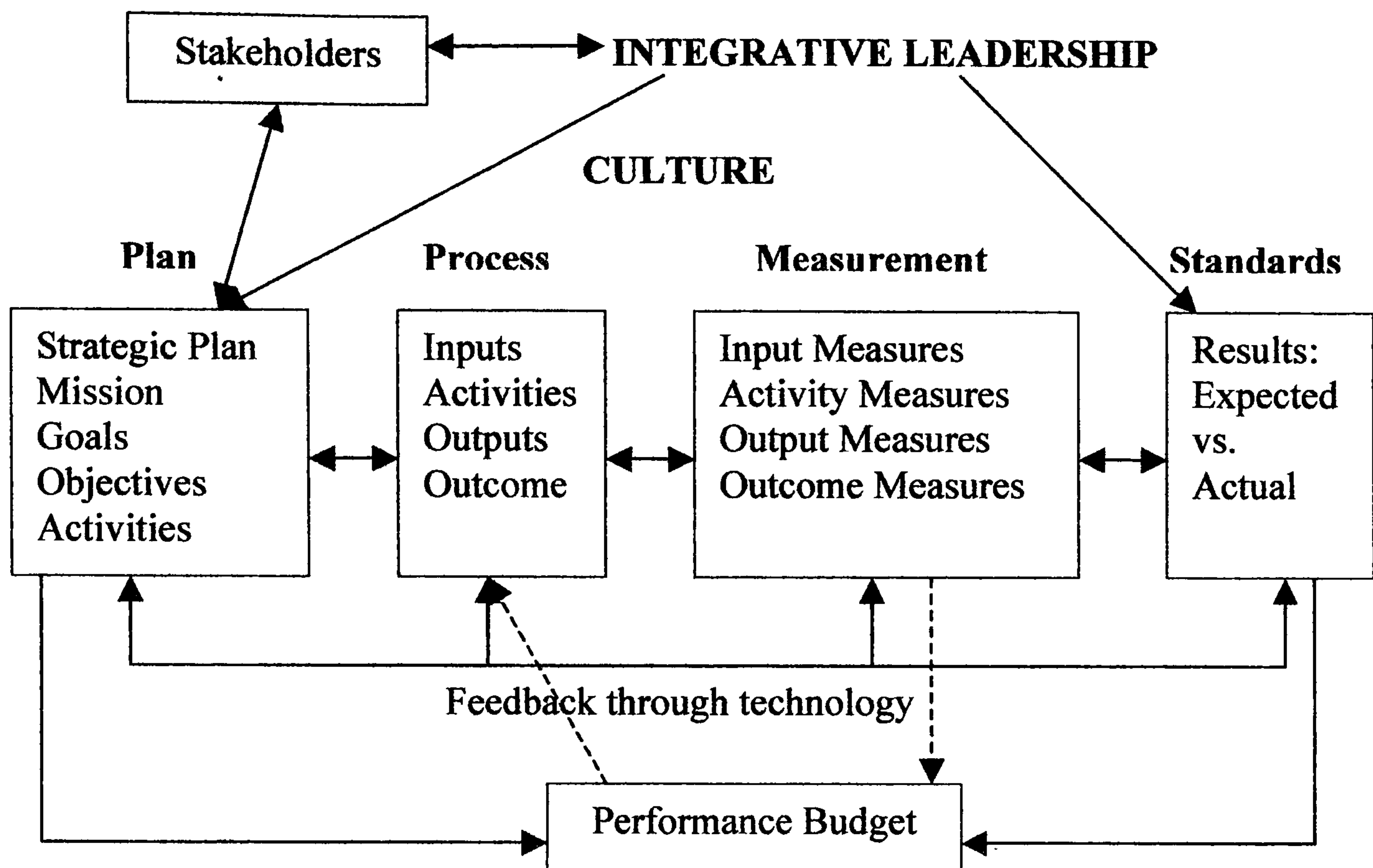


Figure 2.5 An integrative model for performance measurement in not-for-profit organisation

Source: Adapted from Beckett-Camarata and Camarata (2000)

This proposed model tries to move organisation toward becoming 'mission driven' and move away from 'input focus'. In order to be mission driven, acceptable goals for all stakeholders are established. Then all these goals will be tested against standards by applying proper measures including input, activity, output or outcome measures. The actual versus expected results will be used as basis for performance budget, which is related to organisation strategic plan.

Thus far the concepts of performance measurement system are reviewed in both for-profit and not-for-profit organisation, last section in this chapter will deal with specific performance measurement system used in higher education.

2.6 Performance measurement in higher education

Performance measurement in higher education is becoming increasingly important as it assures that higher education institutes can achieve their strategies, while the quality of education is not compromised. The concepts of quality assurance in higher education are adopted in many countries such as the United Kingdom (Randall, 2001), Hong Kong (Leong and Wong, 2001), China (Demin et al 2001), Denmark (Thune, 2001), the United States (Eaton, 2001), Chile (Lemaitre, 2001), Australia (Dow, 2001), and South Africa (Jacobs, 2001) for example. The quality assessment model based on the review by van Vught and Westerheijden (1993) includes four main elements, which are; a national body that will set up the quality assurance standard and procedure; self evaluation: external peer evaluation; and a published report (Brennan and Shah, 2000).

In the United Kingdom (UK), the quality assurance agency for higher education (QAA) was established in 1997 as an independent body funded by UK universities and the main UK higher education funding bodies. This institute aims ‘to safeguard the public interest in sound standards of higher education qualifications and to inform and encourage continuous improvement in the management of the quality of higher education’ (Quality Assurance Agency for Higher Education, 2006). This organisation also sets the standards and uses a peer reviews processes to audit and review universities. The examples of standard include accreditation of prior learning, benchmark statements, code of practice, framework for higher education qualifications, and programme specifications. The objective of the UK quality assurance system is not only to assure the accountability but also to improve the quality of higher education (Brown, 2004). Based on this system, UK universities then adopt this set of standards and use as their main performance measurement system.

In the performance measurement system in higher education, performance indicators are used to monitor how a university performs. These measures are related to the quality of inputs, processes and outputs. According to Johnes and Taylor (1990), inputs consist of labor services (academic staff and nonacademic staff), capital services (building equipment, and land), consumables, and students. Then these inputs

will pass through related processes, which are teaching activity, research activity, administration, supporting services, and other activities to produce outputs, which consist of graduates, research, consultancy project work, and also cultural and social outputs. Thus to monitor the performance of the university, the measures must cover all these inputs, processes, and outputs.

A review of literature (Johnes and Taylor, 1990; Higher Education Statistics Agency, 2006; Leach, 2006, O’Leary et al 2006) indicates commonality of performance measures in higher education. Johnes and Taylor (1990) categorised these measures into input, process, and output measures as follows.

Input measures

- *Entry standard*: It is a measure of quality of input, which can be expressed as average entrance score of student that is used to get into a university. Example of measure in this category is the average tariff score of new students.
- *Library and computer spending*: It is one of inputs (capital service) that will help generate good outputs from a university. Library and computer spending includes books, journals, staff, computer hardware and software, etc.). The number is usually presented on 3-year average to reduce uneven expenditure.
- *Facilities spending*: Similar to library and computer spending, it is capital service. This includes the spending in sports, career service, health, and counselling. These expenditures are usually averaged over three years to reduce uneven expenditure.
- *Teacher score*: Teacher or lecturer is one of university’s inputs (labor service). This indicator measures the quality of lecturers based on their seniority and qualification. It can be measured against expected standard of qualified lecturer in a university.

Process measures

- *Unit costs*: It is the ratio between general expenditure on academic department divided by number of full-time equivalent students, including undergraduates, taught postgraduates, and research postgraduates. This ratio expresses the efficiency of the process in university.
- *Student-staff ratio*: It is the ratio of number of students and number of staff in a university. It is another ratio that measures the efficiency of the process in university.
- *Non-completion rates*: It is 'the proportion of any given entry cohort of undergraduates who had not completed their degree course (at the university at which they originally registered)' (Johnes and Taylor, 1990) within normal time period. This ratio shows effectiveness of process in university.
- *Student satisfaction*: It is measured in perspective of students, which will reflect the quality of process in a university. Data can be obtained from the national student survey.
- *Value added*: It is measured of the difference between quality of input and quality of output. It measures an ability of process to convert poor intake students into good graduates.

Output measures

1. Graduates

- *Degree results*: It is the measures of quality of graduate and can be calculated by dividing number of graduates with a first class honours degree by total number of graduates.

- *First destination of new graduates*: It is the ratio between the total number of graduates who take up permanent employment or further study divided by the total number of graduates. It is another measure of quality of graduates in higher education.

2. *Research*

- *Peer review*: It is the measures of quality of research based on opinion of experts. In UK, the research assessment exercise (RAE) score is an example of measures in this category.
- *Publications*: It is counted by number of publication, which includes papers in academic journals, authored books, edited books, etc. It is 'more objective than measures based on peer review' (Johnes and Taylor, 1990). Normally it is measured against number of full time academic staff or number of department.
- *Citation*: This measure is not only based on quantitative approach, it also reflects the quality of research publication. It counts the number of time those publications are cited by other authors.
- *Research income*: It also reflects quality of research of a university. If university produces good quality of research, it will finally attract funding to university.

3. *Service to community*

- *Widening participation*: It is measure of percentage of students who come from the area that has low proportion of young people in higher education in order to promote the higher education to cover all areas in country.

This classification of measure is merit based on the university processes and outputs. It is similar to classification of measurement in for-profit organisations. However, the

alternative options include the classification based on university activities (measures in teaching, research, and academic services to community) or based on stakeholder's perspectives (measures in the government concerns, students' concerns, or employers' concerns, etc.). Nevertheless, the problem of the first option is that it tends to overemphasize output measures (lagging indicators) rather than input or process measures (leading indicators). For the second option, the classification may produce some overlapping measures. For example, measures in the government concerns may be the same as students' and employers' concerns. Thus the classification is not as clear as the one presented above.

Measures presented in this classification cover the most important activities but they are still fragmented. These measures are difficult to compare among institutions or even within institution itself. A University will still not recognise if it performs well in general. There is still no apparent benchmarking system at the moment. Also most measures do not reflect the efficient use of resources within university. For example, a university can perform well in teaching but it may also invest too much funding into that area, resulting in poor research performance. This is an issue that needs to be addressed.

Currently, the performance measurement system that is in place is the national standard set up by an independent agency in order to monitor the performance. However these performance measures are mostly for external uses, i.e. for grant allocation by the funding bodies. This system is however less used for internal management, as it still does not provide any linkage between measures and mission of university.

To fully utilise this set of measures, Cave et al (1989) recommended that each measure should be evaluated according to these criteria

1. Type of indicator: Whether it is input, process, or output measures
2. Relevance: Whether that particular measure actually reflects the objective of university
3. Ambiguity: Whether users understand the measure well and use less judgment to indicate the quality

4. Cheat-proofness: Whether the measure can be manipulated easily
5. Cost of collection and availability of comparative data: Whether benefit of collecting data exceeds its cost
6. Level of aggregation: Whether it should be measured in university, faculty, departmental, or individual level
7. Relation to other indicators: Whether the particular measure affects the other measures.

By performing evaluations according to these proposed criteria, the university is then able to choose the right measures to monitor its performance. Table 2.6 and 2.7 shows the evaluation of some measures in teaching and research by using these criteria.

In addition to evaluation of the measure, Vakkuri and Meklin (2002) also argued that performance measurement system in higher education must take into the account of special relevance in measuring achievements as follows

1. Universities are primarily funded by government and often they are compared with other institutions in society.
2. Performance measurement system is often designed to measure inputs, outputs, and outcomes.
3. Outputs of university such as quality of research or learning are often difficult to measure.
4. Sometimes, the indicators that are difficult to measure are eliminated from the system so that university can compare results to the others.
5. The comparison problem often arises and conflict occurs when selecting the measures.

Indicator	Type	Relevant	Ambiguity	Manipulability	Cost of collection	Level of aggregation	Relation to other PIs
1. Entry qualifications	Quality of input	Measure strength of demand	High entry score may imply low value-added	Manipulable by, for example, concentration on entrants with non-standard qualifications	Already available on a comparative basis	Department, institution	Input into calculation of value-added
2. Degree results	Quality-adjusted measure of output	Measures central teaching function of higher education	Good degree results may reflect high entry scores or other inputs	Number and degree class of graduates partly at discretion of department or institution	Already available	Department, institution (corrected for subject mix)	Gross output measure for value-added indicator
3. Cost per student or staff-student ratio	Productivity measure (no quality adjustment)	Involves difficult problems of cost allocation	High cost per student may reflect higher quality of teaching and better output; staff-student ratio ignores complementary inputs	Should be corrected by wastage rate to prevent excessive 'low quality admission'	Already available	Department, institution (corrected for subject mix)	

Table 2.6 Characteristics of higher education teaching performance indicators

Source: Cave et al (1991:172-173)

Indicator	Type	Relevant	Ambiguity	Manipulability	Cost of collection	Level of aggregation	Relation to other PIs
4. Value added	Input-adjusted and quality-adjusted output measure	Measures of net output can be combined with input data to generate 'productivity' indicator	Typically measured through differences in qualifications. Monetary value of such increases not available	Form of test may distort teaching and marking patterns	Often involves resolution of major measurement and conceptual problems and longitudinal study	Department, institution	Related to rate of return difference between degree result and 'entry scores'
5. Rate of return	Quality-adjusted productivity measure	Assumes optimal valuations of output, ignores consumption benefits	Both private and social returns can be computed; levels will normally differ		Substantial, arising from need for longitudinal study	Discipline	Related to 'value added' (as production measures)
6. Wastage and non-completion rates	Measure of 'wasted inputs'	Identifies problems with process of selection or teaching	Ignores quality of students on entry: use discourages wider access	Subject to institution own examinations procedure	Already collected	Department, institution	Links with 'number of research students'

Table 2.6 Characteristics of higher education teaching performance indicators (Continued)

Source: Cave et al (1991:172-173)

Indicator	Type	Relevant	Ambiguity	Manipulability	Cost of collection	Level of aggregation	Relation to other PIs
7. Employment on graduating or after five years	Measure of output 'quality'	Does not capture long-term employment prospects or market value of employment	High employment rates on graduation may result from too short a period of search, and lead to poor 'job matching'	Relies on institutional (unaudited reporting)	First destination currently collected; subsequent employment monitoring involves major expense	Department, institution	Element of 'rate of return' calculation
8. Student and peer review	Measure of output and process quality	Contains major elements of subjectivity	Difficulty of defining good teaching (e.g. avoidance of 'spoon feeding')	Manipulable through form of assessment given to students	Already done in some institutions, varies according to the method adapted	Individual teacher department	

Table 2.6 Characteristics of higher education teaching performance indicators (Continued)

Source: Cave et al (1991:172-173)

Indicator	Type	Relevant	Ambiguity	Manipulability	Cost of collection	Level of aggregation	Relation to other PIs
1. Number of research students	Input quality	Measures student demand	Corrections for department size and discipline necessary	Admission policy at department's discretion	Already collected	Department	Related to non-completion rates
2. Publications patents, etc.	Measure of quantity of research output	Problem of making research outputs commensurable: differences in practices across discipline of sub-disciplines	Difficulty of weighting teaching and research in establishing per capita measure: ignores complementary inputs – should work be attributed to current location of research or institution where work was completed?	Encourage publication of 'low grade' research	Already collected in most institutions but practices differ (e.g. non-refereed articles included)	Department or individual	Related to 'research income'
3. Research quality based on a) citation of publications or b) impact factors of place of publication	Quality adjusted output measure	Difficult to produce complete sample	a) Citing of mistakes or summary rather than original work; b) Based on 'average value'	Encourages 'citation circles'	a) Substantial lag b) Impact factors available from citation sources	Individual, department	Quality adjusted for 'research output'

Table 2.7 Characteristics of higher education research performance indicators

Source: Cave et al (1991:172-173)

Indicator	Type	Relevant	Ambiguity	Manipulability	Cost of collection	Level of aggregation	Relation to other PIs
4. Research income	Measure of input and competitive -ness (output)	Can be broken down by type of contract, e.g. research council commercial organisations, etc.	Problem of choosing appropriate standardisation of department size	May encourage performance of academically 'valueless' research	Already available	Department	Input into research output
5. Peer review	Quality-adjusted output measure	Contains major element of subjectivity			Cost depends on frequency	Department, individual	Builds on or complements other PIs
6. Reputational ranking	Quality-adjusted output measure	Contains major element of subjectivity	Problem of low response rate; may reflect historic performance	Risk of collusion in anonymous questionnaires		Department	

Table 2.7 Characteristics of higher education research performance indicators (Continued)

Source: Cave et al (1991 :172-173)

Thus far the reviews of existing performance measurement reveal that various performance measurement systems are now available to be used as a management tool. Performance measurement in higher education, although many in number, still does not address the issues stated earlier. In next two chapters, Chapter Three and Four, two concepts in performance measurement: EVA® and the Balanced Scorecard are introduced and discussed in detail. These two concepts are later proposed as candidates to address problems of performance measurement system discussed earlier.

CHAPTER THREE: ECONOMIC VALUE ADDED

At present, there is a call for a change in financial measurement as academics as well as practitioners argue that traditional accounting measures are not enough and not related to value creation of shareholders. Therefore they are now moving away from the traditional accounting measures and turn to what is called 'value-based measures'. These value-based measures include the Economic Value Added (EVA®), Cash Flow Return on Investment (CFROI), Economic Profit Analysis (EPA), Enterprise Value Ratios, and Competitive Advantage Period (CAP). However EVA® is found to be very popular and among the recently introduced or being considered performance measures, EVA® comes second only to the Balanced Scorecard (Minchington and Francis, 2000). EVA® is widely used in many business corporations including Coca-Cola Co., Briggs & Stratton Corp., Equifax Inc., Herman Miller, SPX Corp., and Siemens A.G., etc. As EVA® is gaining popularity, it is worth considering why EVA® is used to replace or supplement the traditional accounting measures. This chapter therefore attempts to explore the following topics.

1. *Traditional financial metrics.* In this part, the uses and limitations of traditional financial ratios and financial tools are discussed. The financial ratios include the liquidity ratios, asset management ratios, debt management ratios, profitability ratios, and market value ratios. The methods for project evaluation include the average rate of return, payback period, internal rate of return (IRR), and net present value (NPV). This section attempts to address the pitfalls of traditional financial measures and suggests the way to improve them by using the new metric, EVA®, which is discussed in the second part.
2. *Definition and application of EVA®.* In this part, the application and calculation of EVA® are illustrated. The uses of EVA® to address disadvantages of the traditional financial measures are also explored.
3. *Uses and limitations of EVA®.* In this part, the uses and limitations of EVA® in real practices are explored.

4. *EVA® for a not-for-profit organisation.* The final section attempts to provide the information of the search of EVA® implementation in a not-for-profit organisation. This topic is the basis of the development of EVA® for a university, which is considered a not-for-profit organisation.

3.1 Traditional financial metrics

The financial metrics can be separated into two main types, the metrics for measuring the organisation's financial performance and the metrics for project evaluation. The examples of the first are the financial ratios such as the return of investment (ROI) or the return on asset (ROA). The examples of the latter are the NPV, IRR, or payback period method.

3.1.1 The metrics for an organisation's financial performance measurement

Financial ratios can be grouped into five categories; liquidity, asset management, debt management, profitability, and market value ratios.

1. Liquidity ratios

These ratios attempt to find out how an organisation manages its liquid assets to meet its current obligation. Liquid asset is one that can be easily converted to cash at a fair market value. Ratios in this category include the current ratio (current assets/current liabilities) and the quick ratio ((current assets – inventory)/current liabilities).

2. Asset management ratios

Asset management ratios measure how effectively an organisation manages its assets. Ratios in this category include inventory turnover (sales/inventories), days sales outstanding (receivables/average sales per day), fixed assets turnover (sales/net fixed assets) and total assets turnover (sales/total assets).

3. Debt management ratios

Debt management ratios measure how an organisation manages its liabilities and how these liabilities affect risk and return. Ratios in this category include debt ratio (total debt/total assets), times-interest-earned (earning before interests and taxes/interest charges), and fixed charge coverage ratio (earning before interests and taxes/(interest charge + lease payments + sinking fund payment/(1-tax rate))).

4. Profitability ratios

Ratios in this category aim to provide information about the net result of a number of policies and decisions. They show the combined effects of liquidity, asset management, and debt management on operating results. Ratios in this category include profit margin on sales (net income available to common stockholders/sales), basic earning power (earning before interests and taxes/total assets), return on total assets or ROA (net income available to common stockholders/total assets), and return on common equity or ROE (net income available to common stockholders/common equity).

5. Market value ratios

The final group of ratios, market value ratios, gives management an indication of what investors think of a company's past performance and future prospect. Ratios in this category include price to earning ratio (price per share/earning per share) and market to book ratio (market price per share/book value per share).

These ratios are often used to evaluate an organisation's financial performance. However there are also problems in these traditional financial ratios (Brigham and Gapenski, 1997:66), which can be described as follows.

1. *The benchmarking problem.* Financial ratios are often used as benchmarking. Although this gives valuable information, sometimes it gives a wrong signal as many large organisations operate a number of different divisions in different industries. In such cases it is difficult to develop meaningful industrial averages to use as benchmarking. The ratios are then more useful for small single-product companies than for large multi-product companies.
2. *The distortion of comparative data.* Inflation can significantly distort an organisation's balance sheets. Profit can also be affected because of the distortion of depreciation charges and the cost of inventory included in the cost of goods sold. Therefore the ratio analysis of firms of different ages or which use different accounting methods must be interpreted with caution and judgment.
3. *Ignorance of note to financial statement.* Some information, which can significantly affect a company's financial conditions, may not be shown in financial ratios. It is often contained in the notes to its financial statement. Therefore looking at the ratios alone may not give a full picture of business performance.
4. *Interpretation of results.* It is difficult to conclude whether certain ratios are good or bad. For this reason, ratios are only used as inputs for judgmental decision.
5. *Differences in accounting treatment.* Different accounting practices may distort ratio comparison. The methods of calculating the value of inventory are ones of the examples. The ratios can be significantly changed because of these accounting treatments and then cannot be compared.
6. *Window dressing.* Companies sometimes employ window dressing to make their financial ratios look better to outsiders. The accounting measures can be easily manipulated according to the accounting rules.

Although some of these disadvantages of traditional financial ratios are not limited to these measures, many of these can be eliminated by applying new metrics, which is discussed later in this chapter.

3.1.2 The metrics for the project evaluation

The project can be evaluated by several methods. Those methods include the average rate of return, payback period, internal rate of return, and net present value.

1. *The average rate of return.* It is also called ‘the return on investment or ROI’. This is the accounting measure that represents the ratio of the average annual profits after taxes to the investment in project. The advantage is its simplicity. It makes use of readily available accounting information. However its disadvantages are that it does not take account of the effect of the cost of capital of an organisation. It can be easily manipulated and it is based on accounting income rather than on cash flows. It also fails to take account of the timing of cash inflows and outflows; hence time value of money is ignored.
2. *Payback period.* The payback period of an investment project provides the information of a number of years required to recover an initial cash investment. A shortcoming of this method is that it fails to consider the cash inflow after the payback period. It also does not take account of the magnitude or timing of cash flows during the payback period.
3. *Internal rate of return (IRR).* This is perhaps the most popular method for project evaluation. IRR is calculated by the discounted cash-flow method, which takes account of both the magnitude and the timing of expected cash flows in each period of entire project’s life. IRR is the discount rate that equates the present value of the expected cash outflows with the present value of the expected cash inflows. It can be represented by the rate, r , so that

$$\sum_{t=0}^n \left[A_t / (1 + r)^t \right] = 0$$

Where A_t is the cash flow for period t , n is the last period in which cash is expected, and r is the rate that discounts the stream of future cash flows to be equal to the initial outlay at time 0 or r is the IRR.

Acceptance criterion is to compare the IRR with a required rate of return, known as hurdle rate. If the IRR exceeds hurdle rate, the project is accepted; if not it is rejected.

Although the IRR is widely used to evaluate the project, a problem with the IRR method is that multiple IRRs are possible. A necessary condition for this occurrence is that the cash flow stream changes sign more than once. This may be because there is another investment at the middle of project life. Decision makers must be aware of this effect. When it happens, IRR does not have any meaning and an alternative method must be used.

Another problem of the IRR method includes the assumption of the reinvestment rate. In this method, the reinvestment rate is assumed to be equal to the project's IRR. For proposals with a high IRR, a high reinvestment rate is assumed, while for proposals with a low IRR, a low reinvestment rate is assumed. This may not be true as the actual reinvestment rate of intermediate cash flows may differ than the IRR.

Besides, the IRR method may provide incorrect rankings of mutually exclusive investment projects. Here is the example.

There are two mutually exclusive investment projects to be considered. Project A is an investment of £20,000 that yields a return of 30%, while project B is an investment of £200,000 that yields a return of 20%. Assume that a company's cost of capital is 10% and the total budget is £200,000. If we choose the investment project based on its IRR, it seems that project A should be selected because of its higher rate of return. However, if we consider in term of monetary, the decision will be changed. Consider the project A, investment in the project will obtain the return $20,000 \times 30\% = £6,000$. Therefore, the left £180,000 (£200,000 minus £20,000) can be

reinvested at the cost of capital, 10%, the return obtained is £18,000. As a result, the total return from the budget £200,000 equals £24,000 (£6,000 plus £18,000). Consider project B, investment in the project will obtain $200,000 \times 20\% = £40,000$. It can be obviously seen that investment in project B provides higher value to a company than investment in project A. Therefore project B is preferable.

Although there are many criticisms, the IRR method is still widely used because decision makers find it easier to make comparison among the investment projects.

4. *Net present value (NPV)*. Like the IRR method, the NPV method is a discounted cash-flow approach. In this method, all cash inflows and outflows are discounted to present value, using the required rate of return. The NPV is

$$NPV = \sum_{t=0}^n \left[A_t / (1 + k)^t \right]$$

Where k is the required rate of return. If NPV is positive, the project is accepted, if it is negative, it is rejected.

In general, the NPV and the IRR methods give the same acceptance or rejection decision. However as mentioned earlier, sometimes the IRR method produces multiple answers, in that case, the NPV method is preferable.

Although the NPV is perhaps the best method for project evaluation, it is less used than the IRR because decision makers have to find the right required rate of return to discount the future cash flow. Besides, NPV is assumed that the cost of project remains constant throughout the analysis period. This assumption may be incorrect for calculation in some projects.

Thus far, the reviews of the traditional financial measures reveal the shortcomings of those measures in measuring financial performance or evaluating the project.

However some of these shortcomings can be addressed by introducing the new metric such as EVA®, which is presented in next topic.

3.2 Definition and application of EVA®

The concept of EVA® is not a new discovery. This concept has been around for many years. The residual income is an accounting performance measure calculated by subtracting capital charge from operating profit. EVA® is thus one version of the residual income with some adjustments. According to Wallace (1997), one of the earliest to mention the residual income concept was Alfred Marshall in 1890. Marshall defined economic profit as total net gains less the interest on invested capital at the current rate.

Having known that this idea has been around for more than a century raises question of its recent publicity and praise among academics and practitioners. The earlier concept of residual income was rarely used in companies. However, as the same concept with some adjustments, EVA® has gained wide publicity in the recent years. The number of companies adopting EVA® is increasing rapidly (Wallace, 1997). One of the possible reasons to explain why EVA® gains such popularity is that EVA® is claimed to be closely related to the stock price and may be due to the continuous marketing by Stern Stewart & Co, the inventor of EVA® metric. EVA® is also often called Economic Profit (EP) in order to avoid problem related to trade marking, as the term 'EVA®' is a registered trademark of Stern Stewart & Co. As the inventors of the EVA®, Stern Stewart & Co. has been the consultant for over 200 companies in US, Europe and the rest of the world applying EVA® for their financial management and incentive compensation.

Many EVA® companies claim that EVA® is very useful management tool. Coca-Cola, one of America's most enthusiastic proponents of EVA®, earned impressive rates of return after adopting EVA®, while the United States Postal Service claims that EVA® brings together all aspects of the business into one measure. Perhaps the strong selling point of EVA® is that EVA® adopters tend to outperform their peers in the market (Stewart et al., 2002). As a result, EVA® obviously becomes a powerful management tool in present day.

3.2.1 Definition of EVA®

According to Stewart (1991:742), The Economic Value Added (EVA®) is

‘A fundamental measure of corporate performance, it is computed by taking the spread between the return on capital and the cost of capital, and multiplying by the capital outstanding at the beginning of the year (or the average over the year if that was used in computing the return on capital). It is the residual income that remains after operating profits cover a full and fair return on capital (i.e., the cost of capital)’.

In formula,

$$\text{EVA®} = (r - c^*) \times \text{capital}$$

Where

r = rate of return, which can be calculated by dividing the net operating income after taxes (NOPAT) with capital

c^* = cost of capital

For example, if NOPAT is £200,000, capital is £1,000,000, and $c^* = 15\%$

$$r = 200,000 / 1,000,000 = 20\%$$

$$\text{EVA®} = (20\% - 15\%) \times 1,000,000 = £50,000$$

The previous formula can also be presented in the alternative format as follows.

$$\text{EVA®} = (r - c^*) \times \text{capital} = r \times \text{capital} - c^* \times \text{capital}$$

$$\text{EVA®} = \text{NOPAT} - c^* \times \text{capital}$$

$$\text{EVA®} = \text{Operating profits} - \text{Capital Charges}$$

According to this formula, it can be obviously seen that EVA® increases when

1. Operating profits increase without tying up more capital
2. Invest more capital in projects that earn more than cost of capital then the operating profits will exceed the capital charges.
3. Liquidate capital in projects that earn less than cost of capital then the less operating profits are compensated by less capital charges.

If EVA® is zero, it means that the shareholders have earned a return that compensates the risk. Therefore, it is a sufficient achievement. If EVA® is positive, shareholder value has been created. The shareholders have earned a return higher than the risk.

The concept of EVA® is closely linked to the concept of Market Value Added or MVA. MVA is the difference between the company's market and its book value. In formula;

$$\text{MVA} = \text{Company's total market value} - \text{Capital invested}$$

Or MVA can be defined as

$$\text{MVA} = \text{Market value of equity} - \text{Book value of equity}$$

Where the market value of equity includes both tangible and intangible assets such as goodwill or brand image, book value of equity refers to all equity equivalent items such as reserves, retained earnings, and provisions.

According to Stewart (1991:153), MVA identifies how much value company has added to, or subtracted from, its shareholders' investment. Whether a company has positive or negative MVA depends on the level of rate of return compared to the cost of capital of the company. If company obtains higher rate of return than its cost of capital, its equities will be sold in premium price, therefore MVA is positive. On the other hand, if company obtains lower rate of return than its cost of capital, the stock will be sold at discount rate and MVA is negative. All of these are also applied to EVA®. Thus positive EVA® also provides positive MVA and vice versa. Stewart

(1991:153) defines that MVA equals to present value of all future EVA®. The relationship between MVA and EVA® can be shown in Figure 3.1.

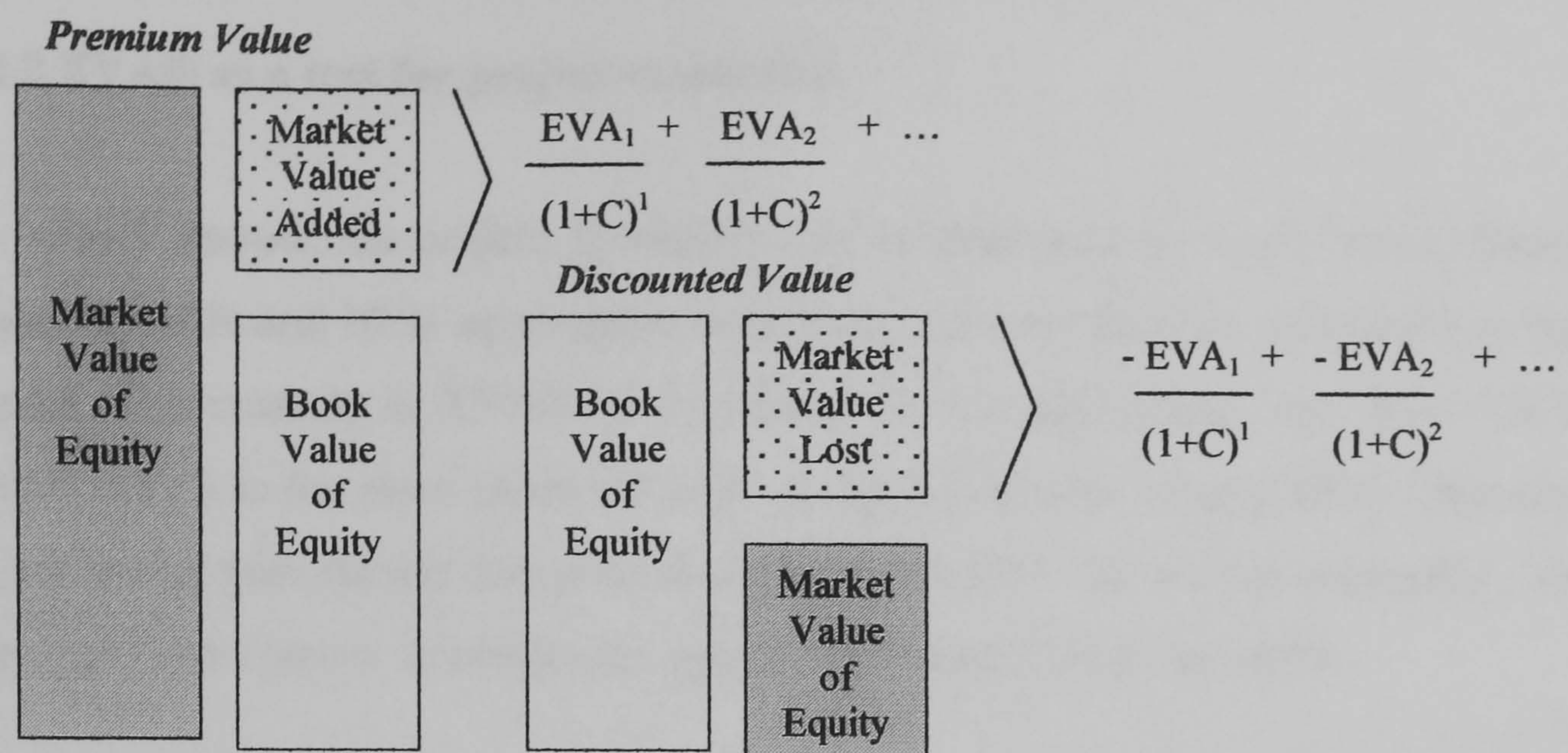


Figure 3.1 The relationship between MVA and EVA®

Source: Stewart (1991:154)

According to the Figure 3.1, it can be easily seen that the market value of equity is equal to the book value of equity plus present value of all future EVA®. The simple analogy is the concept of bond pricing. If the yield of bond exceeds the current market interest rate, bond will be sold at a premium. In the same way, if the rate of return of the company exceeds its cost of capital (or EVA® is positive), then MVA is positive. On the other hand, if the rate of return is less than its cost of capital (EVA® is negative), MVA is then also negative.

However the relationship between EVA® and MVA is not always positive, because the invested capital in EVA® calculation sometimes does not reflect the real value. It is usually the historical book value therefore the calculated EVA® may not be the actual EVA®. Apart from that, the NOPAT in EVA® formula may contain some accounting measures that do not reflect the cash flow. That is the reason why Stern Stewart & Co., the strong proponent and inventor of EVA® tries to make many adjustments in order to reach the actual number of EVA®. If those accounting numbers are not adjusted, EVA® will certainly have the same problems as those of the traditional financial ratios as reported earlier in section 3.1.1. Even after accounting numbers are adjusted, although most problems are addressed, EVA®

may still have problems unresolved, especially benchmarking problem as it is still difficult to compare EVA® of the company in different industries.

3.2.2 EVA® as a tool for project evaluation

As widely known, the project feasibility can be evaluated by many tools. Among those, the IRR and NPV approaches tend to be the most popular tools used in this regard. The concept of EVA® is equivalent to the discounted cash flow (DCF) model, which is the same as the concept of the net present value (NPV). Therefore its advantages are mostly the same as those of the NPV for project evaluation. The example shown below illustrates the equality between EVA® and NPV.

If the project A has its net operating profit after tax (NOPAT) of £5 million a year for five years, its cost of capital is assumed constant at 10% and its initial investment is £15 million, then its EVA® and NPV can be calculated as shown in Table 3.1

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
NOPAT		5,000	5,000	5,000	5,000	5,000
Invested Capital						
- Beginning		15,000	12,000	9,000	6,000	3,000
Less Depreciation		(3,000)	(3,000)	(3,000)	(3,000)	(3,000)
- Ending	15,000	12,000	9,000	6,000	3,000	0
Cost of Capital	10%	10%	10%	10%	10%	10%
Capital Charge (Cost of Capital x Beginning Invested Capital)		1,500	1,200	900	600	300
EVA® (NOPAT – Capital Charge)		3,500	3,800	4,100	4,400	4,700
Present Value of EVA®	$= 3,500/1.1 + 3,800/1.1^2 + 4,100/1.1^3 + 4,400/1.1^4 + 4,700/1.1^5 = 15,326$					
Net Cash Flow (NOPAT + Depreciation - Investment)	(15,000)	8,000	8,000	8,000	8,000	8,000
Net Present Value (NPV)	$= -15,000 + 8,000/1.1 + 8,000/1.1^2 + 8,000/1.1^3 + 8,000/1.1^4 + 8,000/1.1^5 = 15,326$					

Table 3.1 The relationship between EVA® and NPV (in thousand £)

From Table 3.1, the calculation of present value of EVA® is exactly the same as the value of NPV. This is because both methods are based on discounted cash flow model; therefore it yields the same result.

However EVA® gains more advantages because it can be used as a performance measure for the project, while the NPV cannot be used in this way because it gives only one value. NPV cannot be separated and reported in each year, while it is possible for EVA®. This advantages lead to more advantage of EVA® in the way that it can also be use as a tool for performance compensation. The uses of EVA® for performance measurement and compensation are explored in details in the next two topics.

3.2.3 EVA® as a performance measurement

EVA® can also be used as performance measure for an organisation. It is superior to the traditional measure like Return on Investment (ROI) because it includes the cost of capital in the calculation. The following example will clarify how EVA® is preferred to the ROI method.

The project A has its net operating profit after tax (NOPAT) of £3 million a year for five years, its cost of capital is assumed constant at 10% and its initial investment is £15 million, then its EVA® and ROI can be calculated as shown in Table 3.2

In this example, manager may be reluctant to accept this project, if the firm is measured by ROI. If the current ROI of a company is 20%, accepting this project will lower its current ROI in the beginning years (year one and two) because its ROIs are 13% and 17%, which are below the firm's targeted ROI. However if EVA® is used to be a firm performance measure, this project will be selected because it provides positive EVA® in every year.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
NOPAT		2,000	2,000	2,000	2,000	2,000
Invested Capital						
- Beginning		15,000	12,000	9,000	6,000	3,000
Less Depreciation		(3,000)	(3,000)	(3,000)	(3,000)	(3,000)
- Ending	15,000	12,000	9,000	6,000	3,000	0
Cost of Capital	10%	10%	10%	10%	10%	10%
Capital Charge (Cost of Capital x Beginning Invested Capital)		1,500	1,200	900	600	300
EVA® (NOPAT – Capital Charge)		500	800	1,100	1,400	1,700
ROI (NOPAT/Invested Capital)		13%	17%	22%	33%	67%
Net Cash Flow (NOPAT + Depreciation - Investment)	(15,000)	5,000	5,000	5,000	5,000	5,000
IRR	19.9%					

Table 3.2 The comparison between EVA® and ROI (in thousand £)

Apart from that if IRR is found to be 19.9%. It means that the project provides the true return of 19.9% each year. Therefore ROI tends to underestimate the profitability of the project in early years and overestimate the profitability of the project in later years. This phenomenon can be shown in Figure 3.2.

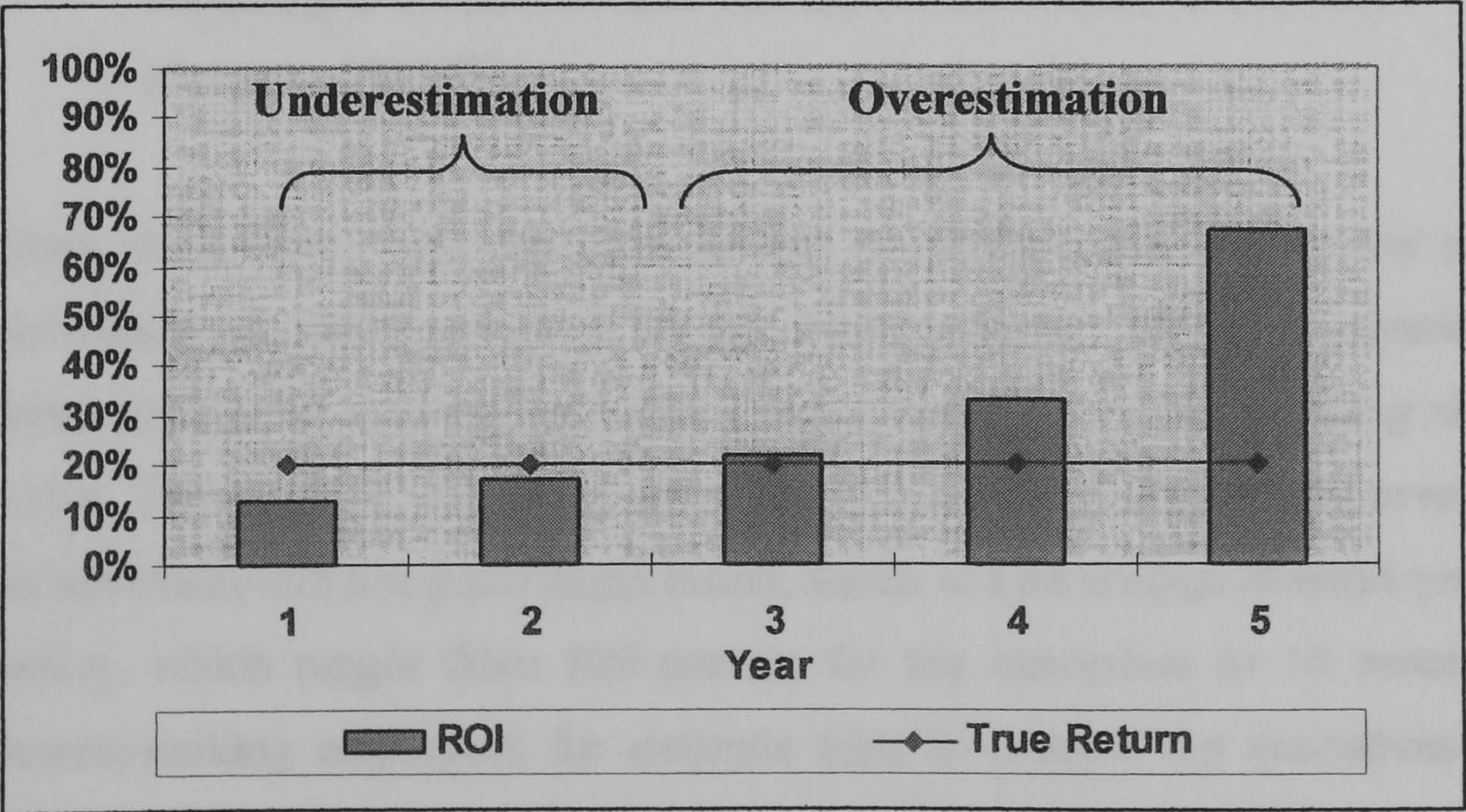


Figure 3.2 The true return and ROI

Each year, the EVA® can be a prime financial measure for a company. It is simply calculated based on the existing financial data provided in its financial statement. Consequently, it is not surprising that the investment analyst has now begun including the EVA® in its analyses.

3.2.4 EVA® as a tool for performance compensation

Stewart (1991:223) claims that EVA® can make managers into owners through the performance compensation. He proposes that six specific elements are required to make managers behave like owners.

‘First there should be only one cash bonus plan, and not a short-term and a long-term plans. Second long-range goals, resource allocation decisions, and operating performance should all be evaluated in terms of EVA®. Third, EVA® targets should be decoupled from the budgetary and strategic planning processes and should be revised according to some predetermined formula. Fourth, the potential bonus should be unlimited in both directions. Fifth, the exceptional parts of exceptional bonuses should be banked forward with their full payout contingent upon continued successful performance. Sixth, managers should be encouraged to buy into and not merely participate in the plan’.

(Stewart, 1991:249)

Stern et al. (2001:148) also indicate that the traditional compensation plans have deficiency as ‘being grounded on the wrong criteria’. EVA® compensation plan helps resolve all existing problems. It promotes the goal of increasing shareholder value. The target is not one number but ‘the expected EVA® improvement’. The achievement will bring full target bonus, which is a percentage of employee’s annual salary, which ranges from 100 percent for top executives to 10 percent for the lowest-ranking employees for example (this is because top executives are more responsible to the success of organisation than lowest-ranking employees and under this bonus system, all employees are also punished for bad result). One possible system works in the way that the target bonus will be exceeded if EVA®

improvement exceeds its target by the interval. For example, if EVA® improvement target is 100 and the interval is 50, the total bonus is double the target bonus, if the achievement is 150, and it is tripled, if the achievement is 200.

However there is also down side risk. If the achievement falls short of the target, the bonus is decreased or no bonus at all. Furthermore, the accrued bonuses that employees have previously received in the bonus bank are also decreased. The example of one possible bonus plan can be illustrated as follows.

Target bonus of the managing director is 35% of base pay, which is £100,000 a year. The company set the bonus structure in the way that 50% of the bonus is based on the corporate EVA® performance, 40% is based on the divisional performance, and 10% is based on the individual performance. Each performance indicator is a number ranging from 0 to 1.5. At the end of the year, each factor comes out to be

Corporate Performance Factor (CPF) = 1.1 (slightly above target)

Divisional Performance Factor (DPF) = 0.9 (slightly below target)

Individual Performance Factor (IPF) = 1.5 (maximum target).

Then the total EVA® bonus will be

$$\begin{aligned}
 \text{EVA® bonus} &= (\text{Salary} \times \text{Target \%} \times \text{CPF}) \times 50\% + \\
 &\quad (\text{Salary} \times \text{Target \%} \times \text{DPF}) \times 40\% + \\
 &\quad (\text{Salary} \times \text{Target \%} \times \text{IPF}) \times 10\% \\
 &= (100,000 \times 35\% \times 1.1) \times 50\% + \\
 &\quad (100,000 \times 35\% \times 0.9) \times 40\% + \\
 &\quad (100,000 \times 35\% \times 1.5) \times 10\% \\
 &= \text{£37,100}
 \end{aligned}$$

According to Stern et al. (2001:149), there are two main types in the policy of bonus payment. One, the target bonus is paid out in cash, but one-third of the excess bonus is banked. In the future, negative performance can results in decreasing of the bonus in bank. However one-third of any remaining sum is still distributed year by year.

This method is designed to induce long-term thinking of managers as their prior earnings are at risk.

The other type is the all-in bonus bank. All bonuses are banked, with one-third is paid out each year. This type generates far more risk for manager's bonus. If target bonus is achieved, the payout is only one-third rather than 100%. Again the negative performance in future also results in decreasing of the bonus in the bank. Figure 3.3 illustrates each type of EVA® bonus payment.

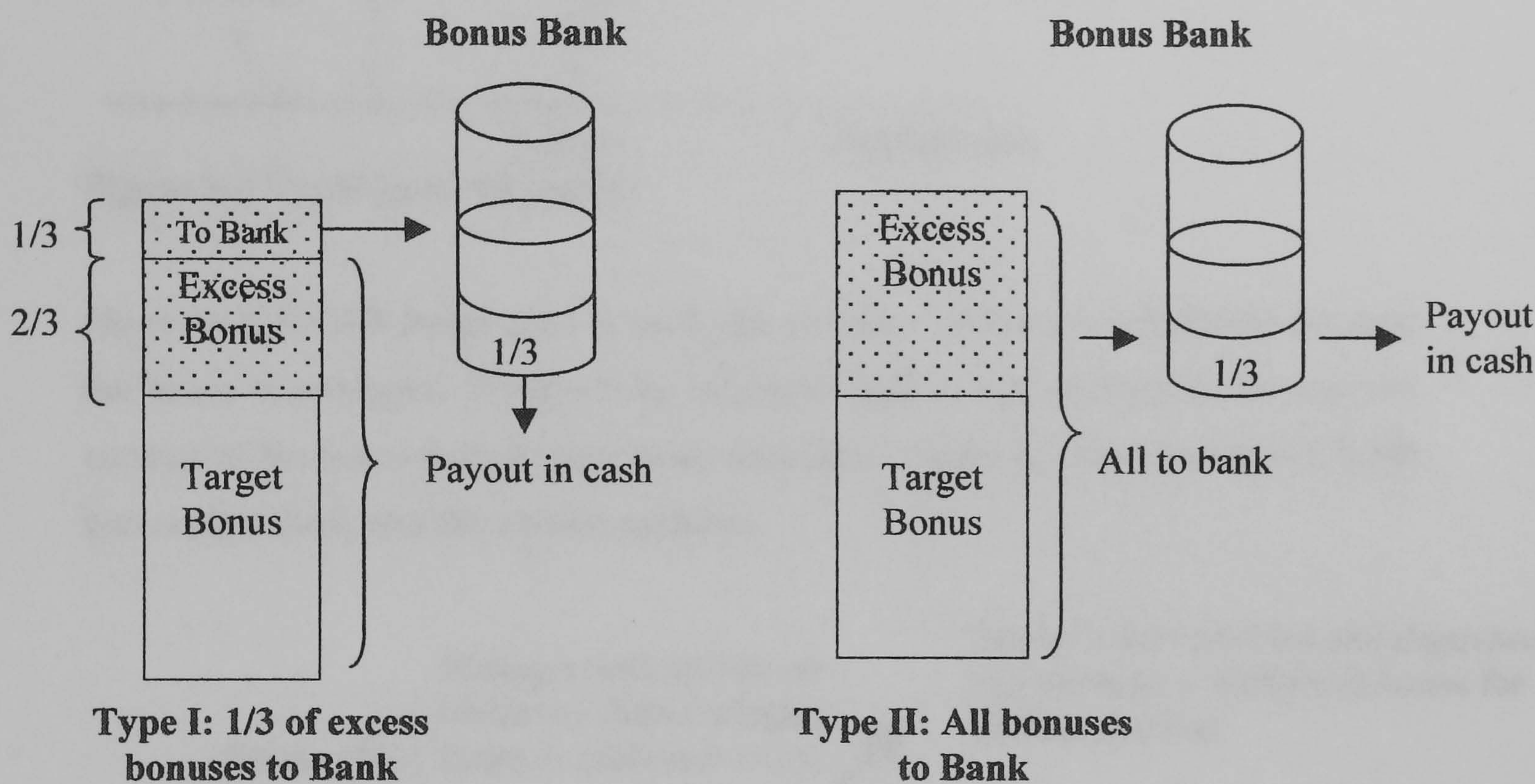


Figure 3.3 Two types of EVA® bonus plan

This concept eliminates the negative effect, which is usually resulted from the traditional bonus system. For example, if target profit is £100 million a year, what happen if near the end of the year, managers know that the company certainly cannot achieve that level? They will slow down their efforts and try to push profit-generating activities to the next year so that they can make big improvement and hopefully can achieve the target next year.

On the other hand, the same effect will occur if the managers have already achieved the target before the end of the year. There is no motivation to maintain their efforts since the bonus is capped no matter how much achievement is more than the target. This situation can be shown in Figure 3.4.

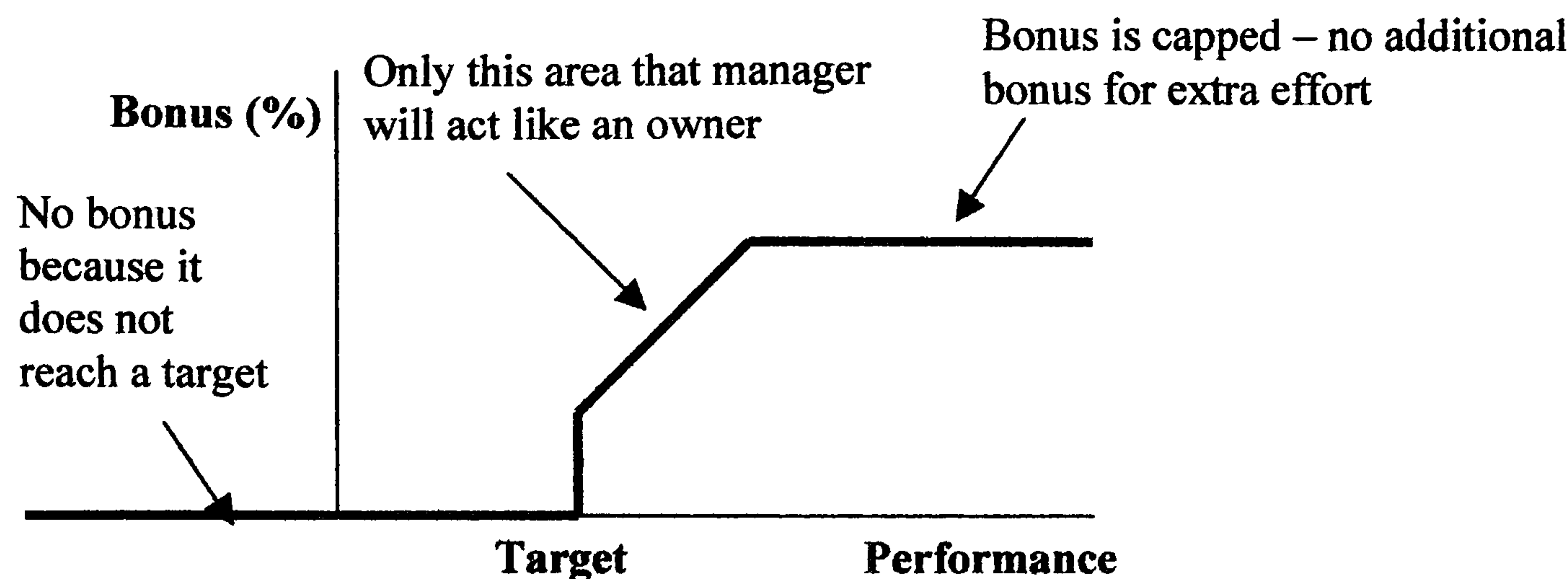


Figure 3.4 Typical pay off profile

However if EVA® bonus plan is used, the previous problem is eliminated because the bonus is uncapped. However the long-term goal is still maintained through the concept of the bonus bank as previously described. Figure 3.5 illustrates how EVA® bonus plan eliminates the attitude problem.

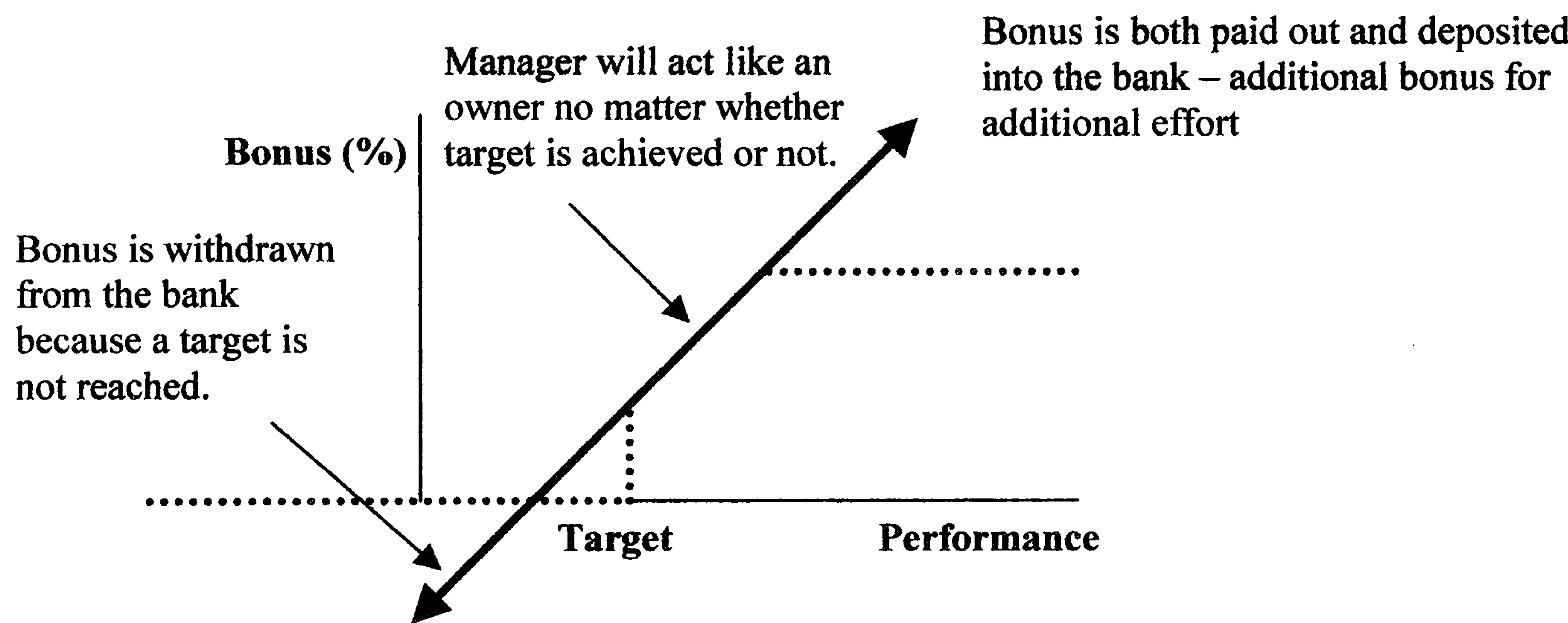


Figure 3.5 EVA® bonus plan pay off profile

Wallace (1997) investigates whether managers of companies, which adopt the residual income-based (i.e. EVA®) compensation plans, take action consistent with the incentives from these measures. In his study, the samples are forty companies that have adopted the residual income-based compensation plan. The actions of these

samples are compared to a matched-pairs control sample of companies where incentive compensation is based on traditional accounting earnings, for example, earning per share or operating profits.

The results of the study show that relative to control companies, the treatment companies, which adopt residual income-based compensation plans tend to

- Limit their new investment and increase their depositions of assets
- Increase payouts to their shareholders by repurchasing their shares
- More intensively utilised their assets.

These results generally support the adage ‘you get what you measure and reward’ and EVA® bonus plan is powerful tool to improve an organisation.

3.3 Uses and limitations of EVA®

EVA® has been claimed to be the market leader among the new value-based metrics such as Cash Flow Return on Investment (CFROI) developed by Holt, the Chicago firm, Economic Profit Analysis (EPA) developed by James Capel, stockbrokers, Enterprise Value Ratios developed by BZW, and Competitive Advantage Period (CAP) developed by Morgan Stanley (Blair, 1997). EVA® has also been claimed that it is superior to a predecessor metric called return on investment (ROI) (Brewer et al., 1999). EVA® helps overcome the goal incongruence that exists between decision makers and shareholders of the firm. The criteria used to make the decision in case of EVA® is that the firm should accept any project that provides positive EVA® or put it in another way, the project is accepted as long as the return exceeds the cost of capital of the firm. However if the maximum ROI is used as a criteria instead of EVA®, the company may reject the project that provide less-than-average ROI of the company although it provides return that exceeds its cost of capital. Therefore the shareholder value is not added, as it should be. The decision to accept or reject the project based on ROI and EVA® in each situation is shown in Table 3.3 where;

Decisions based on ROI (Assuming the average ROI of the company > WACC)			
Critical Decision Point	Decision made in the best interests of manager	Decision made in the best interest of shareholder	Consequence of manager's decision
$ROI < WACC$	Reject	Reject	Goal congruent
$WACC \leq ROI \leq ROI_{avg}$	Reject	Accept	Goal incongruent
$ROI \geq ROI_{avg}$	Accept	Accept	Goal congruent
Decision based on EVA®			
$EVA® < 0$	Reject	Reject	Goal congruent
$EVA® > 0$	Accept	Accept	Goal congruent

Table 3.3 Manager's Decision to accept or reject a project based on ROI and EVA® and its consequence.

Source: Brewer et al. (1999)

WACC = Weighted Average Cost of Capital

ROI_{avg} = Average Return on Investment of the company without pursuing proposed investment opportunity

ROI = Return on Investment of proposed investment opportunity

EVA® has also been praised for its superiority to the earning per share (EPS) regarding to the shareholder value (Stewart, 1991:2). In addition to the superiority of EVA® in project evaluation (comparing to ROI) and in financial performance measurement (comparing to EPS), EVA® is also used as a compensation plan. As described earlier in this chapter, the concept of bonus bank makes managers act like owner. Therefore EVA® is perhaps the only metric that can be used for project evaluation, business performance measurement, and performance compensation plan.

Although EVA® has been praised for its close relationship to stock price (Stewart, 1991:153), many researches do not support this claim. In the study conducted by Biddle et al. (1997), EVA® has been tested whether it is more highly associated with stock returns and firm values than earnings. The study also evaluates which components of EVA® contribute to these associations. The result shows that earning is more highly associated with market-adjusted annual returns than EVA® is and also indicates that EVA® components add only marginally to information content beyond earnings. This study simply does not support claim that EVA® dominates

earnings in relative information content, and suggests rather that earning generally outperforms EVA®.

Cordeiro and Kent Jr. (2001) also examine the relationship between the adoption of EVA® financial performance measurement and management system and the performance of firms in the United States, using security analyst earnings forecasts. They find the absence of the relationship between EVA® adoption and security analyst forecasts of firm performance. EVA® has also been reported of its distortions caused by inflation (De Villiers, 1997). The study reveals that EVA® cannot be used under inflation to estimate actual profitability.

Brewer et al. (1999) also report the limitations of EVA®, which include

1. *Size different*: Since EVA® is an absolute value; firms that have more resources tend to have more EVA®. This is like comparing sale volume between large and small companies.
2. *Financial orientation*: EVA® is solely based on the financial performance, which is a lagging indicator. It will come up at the end of the period when everything has already occurred.
3. *Short-term orientation*: There are many ways to increase current EVA® such as decreasing research and development expenses. However this may cause serious problems to the long-term success of the company.
4. *Result orientation*: EVA® informs things that have already happened. It is only the historical number and no one can change anything.

EVA® has also been criticised that it does not concern corporate strategy at all (Mouritsen, 1998). EVA® is only the bottom line and it answers to question like ‘do we like the result when we make this decision?’ but not the question like ‘how to achieve that result?’

A number of adjustments needed to be performed to reach the number of EVA®, which can go beyond 120 adjustments, are also another weakness of EVA®. Although Stern et al. (1996) claim that it is necessary to address only some 15 – 25 key issues, and in practice, only 5-10 adjustments are really required, Weissenrieder, (1997) argues that the fewer adjustments are made, the more EVA® will look like standard accounting, and hence the less useful EVA® will be.

3.4 EVA® for a not-for-profit organisation

After extensive literature reviews, there is no evidence of the use of EVA® for any not-for-profit organisation. This is not surprising as EVA® was invented to measure the difference between ‘profit’ and capital charge. As a result, EVA® is not found to be used in a not-for-profit organisation where its objective is not financially related. The other reason of non-popularity in not-for-profit sector is that Stern Stewart & Co., the consultant and inventor of EVA® continues to market the uses of EVA® only for the for-profit organisations since these organisations have more potential to invest to implement EVA® than not-for-profit organisation.

Nevertheless, EVA® is found to be used in some state enterprises (Stern Stewart & Co., 2005), which can be claimed to be a semi-not-for-profit organisation as sometimes decisions are made based on policy of government, which may not be in line with business decision. However much more frequently, EVA® in these state enterprises is used to increase its operating efficiency and finally leads to improve in its profit. Thus it is more similar to EVA® for other for-profit organisation than for not-for-profit organisation.

Next chapter, the concept of the Balanced Scorecard is introduced. These two concepts: EVA® and the Balanced Scorecard are then put together into the model of the performance measurement system for a university, which is later described in the Chapter Eight.

CHAPTER FOUR: THE BALANCED SCORECARD

In early 1990s, the Balanced Scorecard made its first appearance and since then many corporations have adopted this concept. It has been taken in different forms in different organisations. Although the concept of combining a number of measures is nothing new or original, the Balanced Scorecard is beyond a measurement system. It has been used as a management system that enables organisations to clarify their vision and strategies and translate them into actions.

In this chapter, the concept of the Balanced Scorecard is explored under the following headings.

1. *The Balanced Scorecard framework and methodology.* In this part, the definitions of the Balanced Scorecard including four perspectives in the Balanced Scorecard: financial, customer, internal business process, and learning and growth are explored in details.
2. *Implementation of the Balanced Scorecard.* The concept of the Balanced Scorecard is further discussed in the topic of managing business strategy, which includes four main processes: clarifying and translating vision and strategy, communicating and linking, planning and target setting, and strategic feedback and learning. The programme to implement the Balanced Scorecard for the organisation is also presented in this section.
3. *Uses and limitations of the Balanced Scorecard.* The advantages and disadvantages of this concept are discussed. The possible pitfall of the implementation of this concept is also presented to explain the reason of success and failure of the Balanced Scorecard implementation.
4. *The Balanced Scorecard for a not-for-profit organisation.* The final section attempts to provide the information of the Balanced Scorecard implementation in a not-for-profit organisation. This topic is the basis of the development of the Balanced Scorecard for a university, which is considered a not-for-profit organisation.

4.1 The Balanced Scorecard framework and methodology

The Balanced Scorecard is the new approach developed by Professor Dr. Robert S. Kaplan from Harvard Business School and Dr. David P. Norton in the early 1990s. It first appeared in the article 'The Balanced Scorecard-Measures That Drive Performance' in the *Harvard Business Review*, January - February 1992 (Kaplan and Norton, 1992). The Balanced Scorecard approach addresses some of the weaknesses and vagueness of previous management approaches. It attempts to provide a clear prescription as to what organisations should measure. It also translates vision and strategy, defining the strategic linkages to integrate performance across organisation, communicating objectives and measures to a business unit, and aligning strategic initiatives. When fully implemented, it aligns everyone within an organisation so that all employees understand how and what they can support the strategy. It can also be used as a basis for compensation and provides feedback to management on whether the strategy is working.

Kaplan and Norton (1996a:18) describe the innovation of the Balanced Scorecard as follows:

'The Balanced Scorecard is a new framework for integrating measures derived from strategy. While retaining financial measures of past performance, the Balanced Scorecard introduces the drivers of future financial performance. The drivers, encompassing customer, internal-business-process, and learning and growth perspectives, are derived from an explicit and rigorous translation of the organization's strategy into tangible objectives and measures'.

The Balanced Scorecard suggests that the organisation performance can be viewed from four main perspectives as follows.

1. Financial perspective. It attempts to answer the question '*to succeed financially, how should we appear to our shareholders?*'

2. Customer perspective. It attempts to answer the question ‘*to achieve our vision, how should we appear to our customers?*’

3. Internal business process perspective. It attempts to answer the question ‘*to satisfy our shareholders and customers, what business processes must we excel at?*’

4. Learning and growth perspective. It attempts to answer the question ‘*to achieve our vision, how will we sustain our ability to change and improve?*’

These four perspectives provide the framework for the Balanced Scorecard as shown in Figure 4.1.

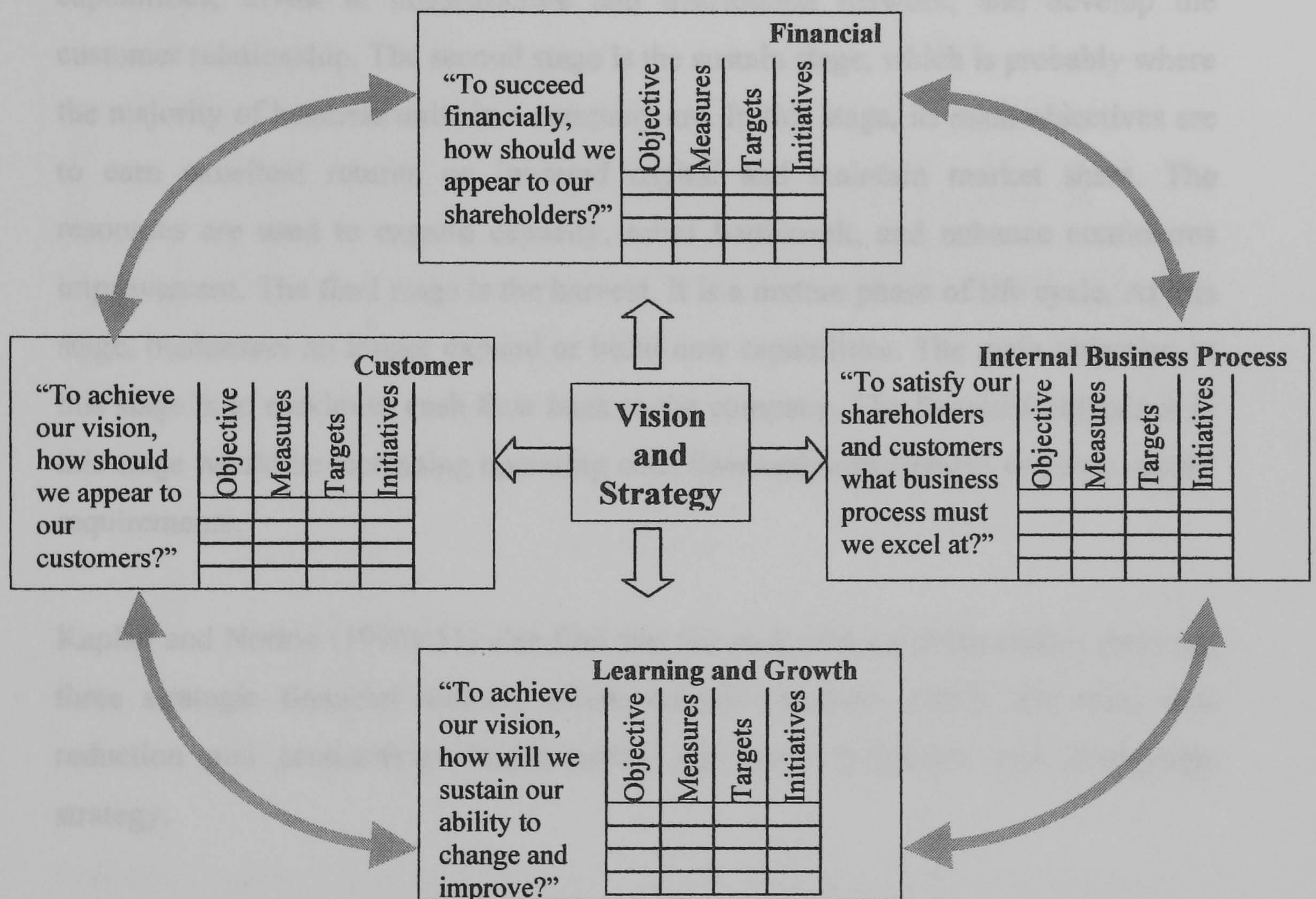


Figure 4.1 The Balanced Scorecard

Source: Adapted from Kaplan and Norton (1996a:9)

4.1.1 The Financial Perspective

For a profit-making organisation, the financial objectives serve as a focus for the objectives in all other perspectives. Every measure in each perspective should be part of a link of cause-and-effect relationships that aims to provide the excellence in the financial performance. Financial objectives can differ significantly in each organisation, which is in different stage of a business's life cycle. Kaplan and Norton (1996a:48) identify three stages, which include growth, sustain, and harvest. The growth stage is the early stage of life cycle. In this stage, there are products or services that have significant growth potential. Considerable amount of resources are usually committed in this stage in order to capitalise full potential. These resources are used to develop new products or services, construct and expand facilities, build capabilities, invest in infrastructure and distribution network, and develop the customer relationship. The second stage is the sustain stage, which is probably where the majority of business units in a company are. In this stage, its main objectives are to earn excellent returns on invested capital and maintain market share. The resources are used to expand capacity, relief bottleneck, and enhance continuous improvement. The final stage is the harvest. It is a mature phase of life cycle. At this stage, businesses no longer expand or build new capabilities. The main objective in this stage is to maximise cash flow back to the company. The financial objectives in this stage would be increasing operating cash flow and reductions in working capital requirements.

Kaplan and Norton (1996a:51) also find that for each of these three stages, there are three strategic financial themes, which include revenue growth and mix, cost reduction and productivity improvement, and asset utilisation and investment strategy.

The revenue growth and mix objective refers to expanding products and services to reach new customers and markets. The most common measure in this category includes sales growth and market share. The cost reduction and productivity objective refers to efforts to lower the costs of products and services. The measures in this category include the measures of the productivity, unit costs, channel mix, operating expenses, etc. The final strategic financial theme, the asset utilisation and

investment strategy refers to the attempts to lower the working capital required to support business and obtain more utilisation of the total assets of an organisation. The measures in this category include return-on-capital employed, return-on-investment, Economic Value Added (EVA®), etc.

The example of measures used for these strategic financial themes and three business strategies (growth, sustain, harvest) can be presented in matrix as shown in Table 4.1.

		Strategic Themes		
		Revenue Growth and Mix	Cost Reduction / Productivity Improvement	Asset Utilisation
Business Unit Strategy	Growth	Sales growth rate by segment, percentage revenue from new product, service, customer	Revenue per employee	Investment as percentage of sales, R&D as percentage of sales
	Sustain	Share of targeted customer and accounts, cross-selling, percentage of revenues from new applications, customer and product line profitability	Cost comparing to competitors', cost reduction rates, indirect expenses as percentage of sales	Working capital ratios (cash-to-cash cycle), return on capital employed, asset utilisation rate
	Harvest	Customer and product line profitability, percentage of unprofitable customers	Unit costs (per unit of output, per transaction)	Payback, throughput

Table 4.1 Measuring strategic financial themes

Source: Kaplan and Norton (1996a:52)

Financial results represent the long-term goal of an organisation. The Balanced Scorecard although has three additional perspectives does not ignore the importance of the financial perspective. Indeed it helps organisation to obtain good financial results, makes the financial objectives explicit, and customises financial objectives to an organisation in different stages of its life cycle.

All measures in the Balanced Scorecard should be part of a link of cause-and-effect relationship. For a profit-making organisation, all measures will end up in the financial objectives. These measures that can drive the financial results include the measures in customer, internal business process, and learning and growth perspectives that are discussed in the following topics.

4.1.2 The Customer Perspective

The main theme in this perspective is to answer the question ‘to achieve our mission, how should we appear to our customer?’ The core measures in this perspective then include five categories: market share, customer acquisition, customer retention, customer satisfaction, and customer profitability (Kaplan and Norton, 1996a:67). The measures in market share reflect the status of organisation in a given market. They can be measured in terms of customers, amount of money spent, or unit volume sold. For the customer acquisition, the measures include the rate at which an organisation attracts new customers or new lines of businesses. Unlike the measures in the category of the customer acquisition, the measures in the category of the customer retention track the rate at which an organisation retains or maintains existing customers. Perhaps the most popular measures in this perspective, the customer satisfaction measures assess the satisfaction level of customers along specific criteria. The final core measure is the customer profitability, which measures the new profit of a customer or a segment.

Beyond these core measures, there are measures in ‘customer value propositions’. They represent the attributes that companies provide to create loyalty and satisfaction in targeted customer segments (Kaplan and Norton, 1996a:73). It is key concept for understanding the drivers of the core measurements: satisfaction, acquisition, retention, and market and account share. These attributes are organised into three categories as shown in Figure 4.2.

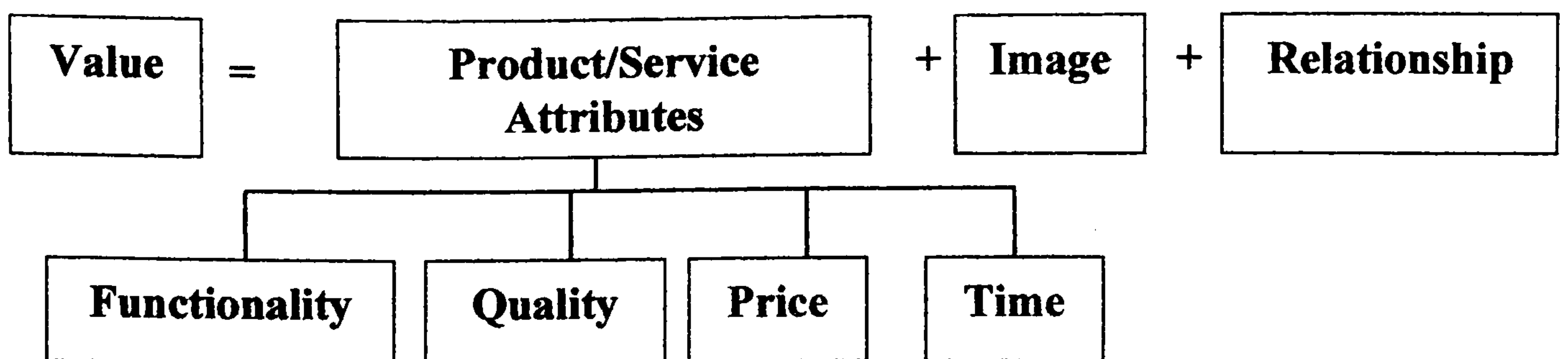


Figure 4.2 The Customer value proposition

Source: Adapted from Kaplan and Norton (1996a:74)

The product and service attributes include all functionalities of product and service, quality, price, and time. Image and reputation reflect intangible factors that attract potential customers. They enable organisation to define itself for its customers. The customer relationship includes the delivery of the product and service to customers and information of how the customer feels about purchasing product and service from the company.

When all measures in this category are formulated, managers should have clear idea of their targeted customer and segment. Both core measures and measures of the customer value preposition should be included into the measures in customer perspective to deliver superior value to their targeted customers.

4.1.3 The Internal-Business Process Perspective

Each organisation has its own set of processes for creating its product and service for customers. However Kaplan and Norton (1996a:96) have proposed a generic value-chain model as shown in Figure 4.3

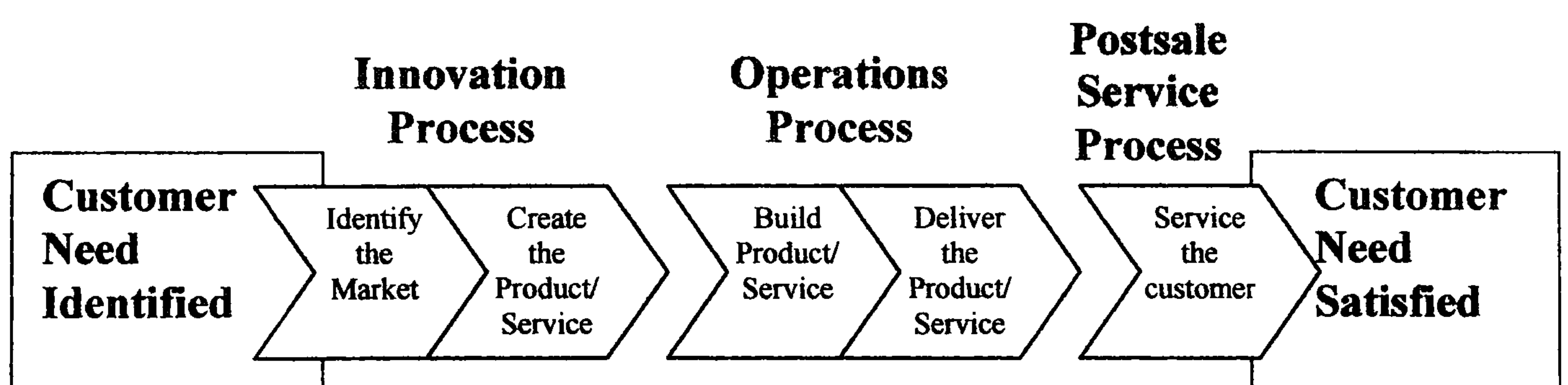


Figure 4.3 The internal-business-process perspective – the generic value chain model

Source: Adapted from Kaplan and Norton (1996a:96)

When customer need is identified, the innovation process begins. Market is identified before products and services are created. In the second phase, the operations process, products and services are built and delivered to customers. In the final phase, customers also receive the postsale service after purchasing the products or services from the company.

In this perspective, the critical processes at which organisation must excel have to be identified. The examples of measures in this prospective include process time measurement, process quality measurement, and process cost measurement.

4.1.4 The Learning and growth Perspective

The fourth and final perspective is developed to monitor the sustainability of organisation's abilities to change and improve. Kaplan and Norton (1996a:127) propose three principal categories for this perspective for both service and manufacturing organisations. These three principal categories are employee capabilities, information systems capabilities, and motivation, empowerment, and alignment.

In the employee capabilities, most organisations have common three outcome measures, which are employee satisfaction, employee retention, and employee productivity. These core measures are correlated as employee satisfaction may drive both retention and productivity. Although employee capabilities are important drivers for better internal business process, they are not sufficient. Information system capabilities are the other factor that organisation must monitor closely. This information system includes the information of customers, internal business process, and financial results.

The final principal category is the motivation, empowerment, and alignment. This category assists organisation to continue improving. Examples of the measures include measures of suggestion made and implemented, measures of improvement, measures of individual and organisation alignment, and measures of team performance.

All of these three principal categories are interrelated as one category drives the others. Figure 4.4 shows the learning and growth measurement framework.

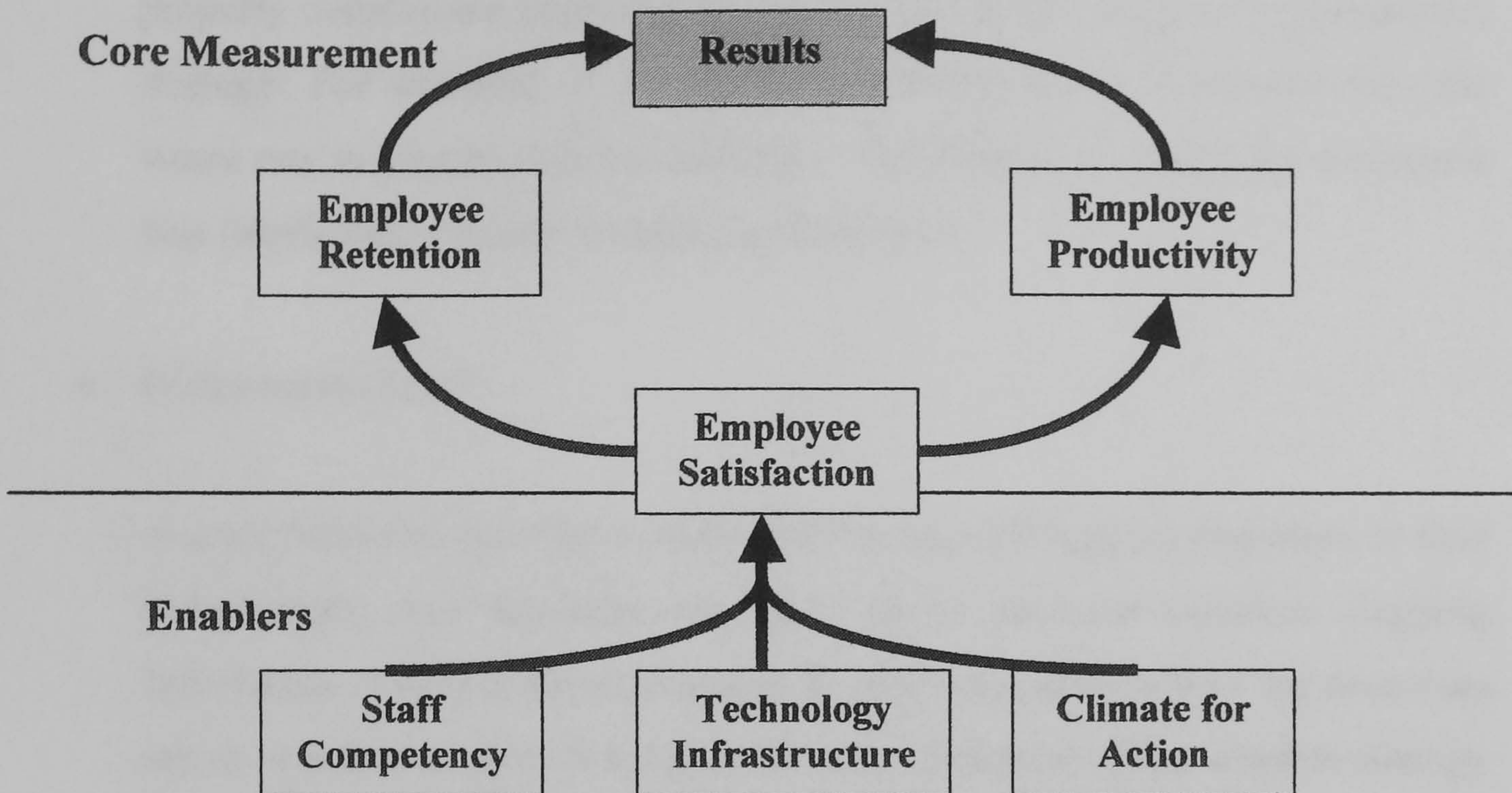


Figure 4.4 The learning and growth measurement framework

Source: Kaplan and Norton (1996a:129)

From the Figure 4.4, staff competency, technology infrastructure, and climate for action drive employee satisfaction that will finally lead to employee retention and productivity.

4.1.5 Linking the Balanced Scorecard to strategy

The Balanced Scorecard is not only a set of measures in each perspective. The Balanced Scorecard must be linked to organisation's strategy in order to be able to describe organisation's vision and create a holistic model of strategy that allows all employees to see how they can contribute to success of the organisation. Kaplan and Norton (1996a:148) propose three principles that enable the Balanced Scorecard to be linked to organisation's strategy.

- Cause and effect relationship

Cause and effect relationships can be expressed by an 'if-then' statement. A properly constructed Balanced Scorecard should tell story of organisation's strategy. For example, if the employee satisfaction is decreased then the waste rate in process will be increased, which leads to unsatisfied customers that finally leads to poor financial performance.

- Performance driver

A good Balanced Scorecard needs both leading and lagging measures. In four perspectives, core measures are likely to be outcome measures (lagging indicators). However these measures do not communicate how the outcomes are to be achieved and do not provide early indication about whether strategy is implemented properly and successfully. On the other hand, leading indicators or performance drivers without outcome measures may enable the organisation achieve only short-term operational improvement but fail to enhance financial performance. Therefore both performance driver and outcome measure are needed in good Balanced Scorecard.

- Linkage to financial outcomes

If the organisation that uses the Balanced Scorecard is a profit-making organisation, all measures should be finally linked to financial outcomes because it is obviously the ultimate goal of the business corporation. However, if it is not-for-profit organisation, financial outcomes may play the support role not the ultimate goal. The measures then should be linked to what is set to be the ultimate goals of those organisations.

These linkages should be made explicit in what Kaplan and Norton call, 'The Strategy Map'. This map will enable everyone in organisation know what the organisation's strategies are and how to achieve them. Figure 4.5 illustrates the example of the strategy map of a company.

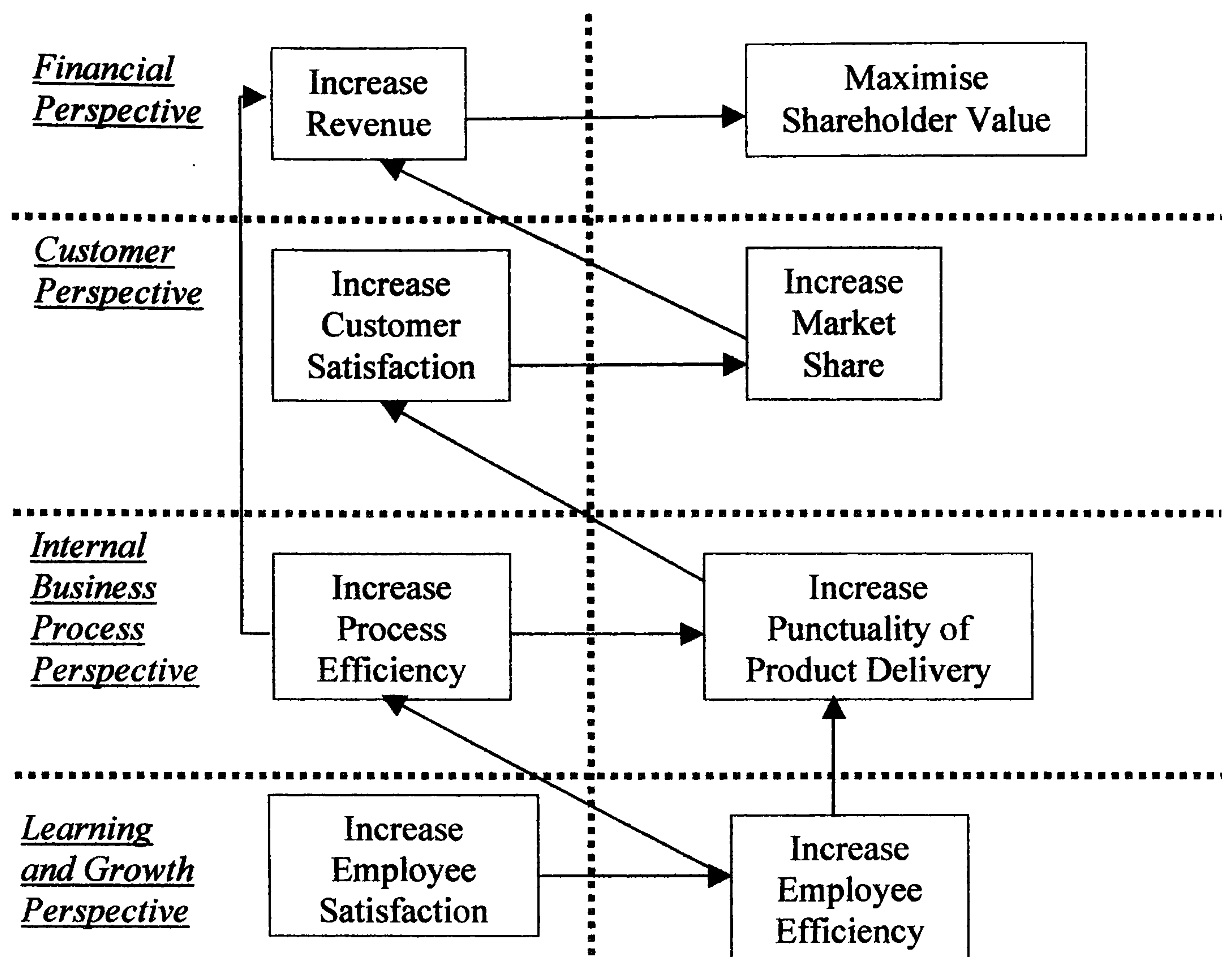


Figure 4.5 The example of strategy map

From Figure 4.5, everyone in this organisation can easily see that the ultimate goal of the organisation is to maximise shareholder value, which can be done by increasing of revenue. One way to increase revenue is to increase market share, which can be a result of higher customer satisfaction. There are many ways to increase customer satisfaction. One way is to improve the punctuality of product delivery, which may be the result of better process efficiency. Finally process efficiency can be improved by efficient employees, who also have high job satisfaction

This strategy map is a set of hypotheses that are linked together by cause-and-effect relationship. This map can be changed as strategy is changed or the specific relationship is found to be invalid. For example, when data is collected, it may be found that customer satisfaction may not lead to high market share. In this case, organisation may change measures or add the other measures that fill the gap in its cause-and-effect relationship.

4.2 Implementation of the Balanced Scorecard

The implementation of the Balanced Scorecard is very important to its success in the future. A poorly designed Balanced Scorecard is one of the major factors leading to failure. The Balanced Scorecard is not a project, which has the definite start and end point. It is the continuous process where the Balanced Scorecard is a heart of all strategic activities. It must be linked to business planning, budgeting, and allocation of resources. It helps organisation translate strategy into actions. Kaplan and Norton (1996a:201) develop the integrated management system using the Balanced Scorecard. This system includes four main steps, which are

1. Clarifying and translating vision and strategy

The organisation's strategy must be the reference point for every management process in an organisation, while the vision is the foundation for strategic learning.

2. Communicating and linking

Goals are aligned from top executives to employees in bottom level. Employee empowerment is encouraged through education and communication within the organisation. Compensation must also be linked to organisation's strategy.

3. Planning and target setting

Targets must be achievable but not too easily to be reached. These targets must be accepted within the business unit. In order to achieve the target, strategic initiatives must be established. Investment is allocated based on organisation's strategy and budgets are linked to a long-term strategic plan.

4. Strategic feedback and learning

When the Balanced Scorecard has been implemented and data has been sufficiently collected, the hypotheses in strategy map must be tested. Team problem solving must also be established. All feedbacks will be reported to management to revise its strategy.

These four processes are linked and the Balanced Scorecard is at the center of the system as shown in Figure 4.6.

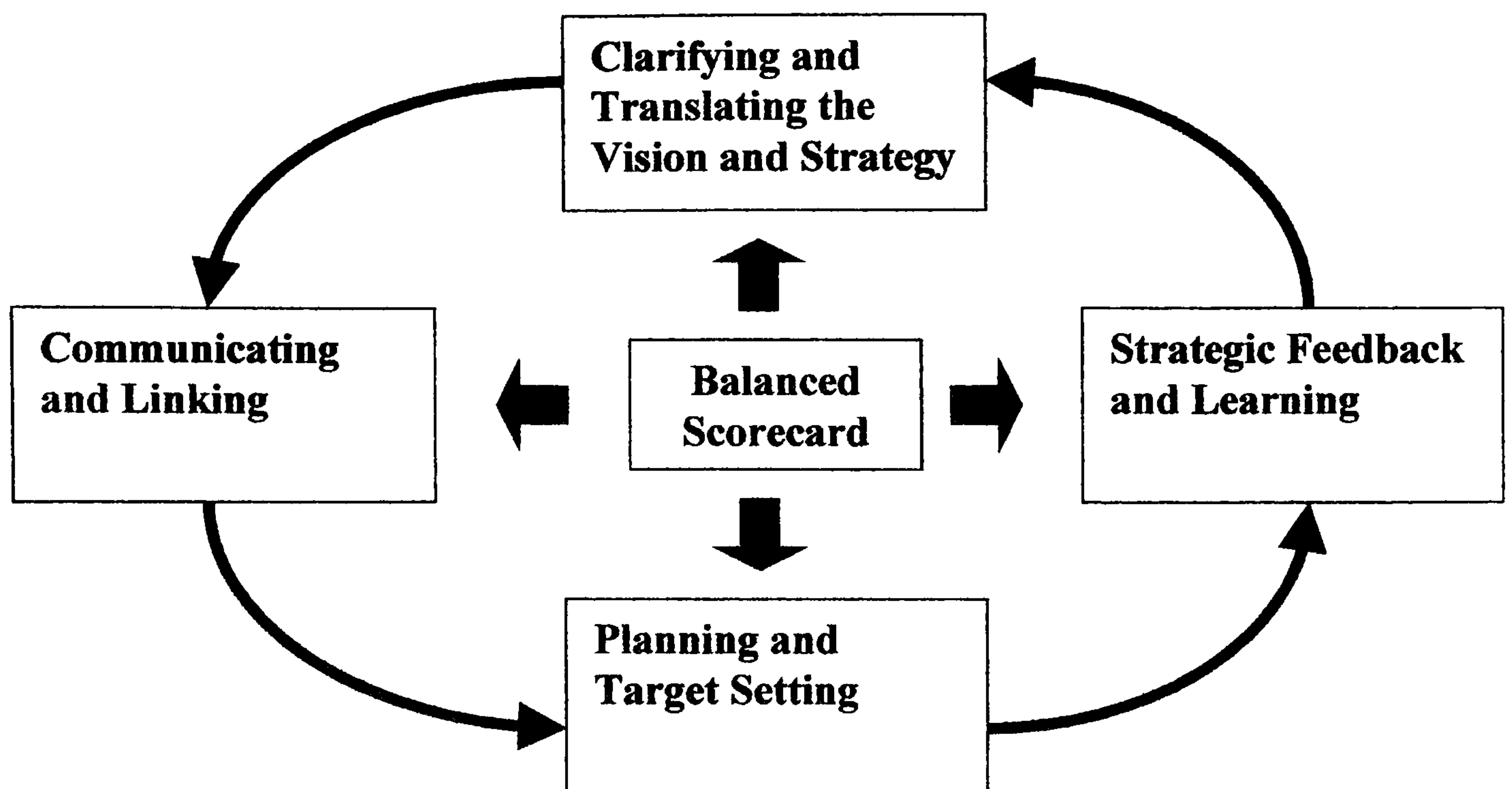


Figure 4.6 The Balanced Scorecard management system for strategic implementation

Source: Adapted from Kaplan and Norton (1996a:201)

For the installation of the Balanced Scorecard, based on Kaplan and Norton's experiences, the Balanced Scorecard can be put in place within 25 - 26 months. Kaplan and Norton (1996b) propose the process of the implementation as follows.

1. Clarify the vision
2. Communicate to middle managers and develop business unit scorecards
3. Eliminate nonstrategic investments and launch corporate change programmes
4. Review business unit scorecards
5. Refine the vision
6. Communicate the Balanced Scorecard to the entire organisation and establish individual performance objectives
7. Update long-range plan and budget
8. Conduct monthly and quarterly reviews
9. Conduct annual strategy review
10. Link everyone's performance to the Balanced Scorecard

Steps 7, 8, 9, and 10 are performed on regular basis. After these ten processes, the Balanced Scorecard is now a routine part of management process. The timeline of these processes are shown in Figure 4.7.

4.3 Uses and limitations of the Balanced Scorecard

4.3.1 The uses of the Balanced Scorecard

The concept of the Balanced Scorecard has been praised throughout the world. As Kaplan and Norton stated in the paper 'The Balanced Scorecard-Measures That Drive Performance' in the Harvard Business Review, January - February 1992 (Kaplan and Norton, 1992), the Balanced Scorecard puts strategy and vision at the centre. The measures in the Balanced Scorecard are designed to pull all staff toward the overall vision. It also helps managers understand the interrelationships, which leads to improved decision making and problem solving. The Balanced Scorecard assists in the important process of arriving at a shared view of organisation and also provides 'a new foundation for strategic control' (Olve et al. 1999:11). The concept of the Balanced Scorecard is also carried into the budgeting system. Barsky and Bremser (1999) explore the implication of the changes on budgeting as the Balanced Scorecard has replaced the traditional systems. They find that in the Balanced Scorecard environment, the role of budget is not simple that of a financial control document, but it acts as an integrated measurement tool. The budget is aligned with strategic initiatives. Feedback from superiors is ongoing and interactive, and the role of finance function is reduced. The Balanced Scorecard also provides greater team orientation.

Hepworth (1998) also identifies that the term 'the Balanced Scorecard' reflects the balance between short-term and long-term objectives, financial and non-financial measures, lagging and leading indicators and external and internal performance perspectives. The added value of the Balanced Scorecard is in 'the drawing together of all the key business areas and identifying and exploiting the linkages that deliver success' (Hepworth, 1998:560).

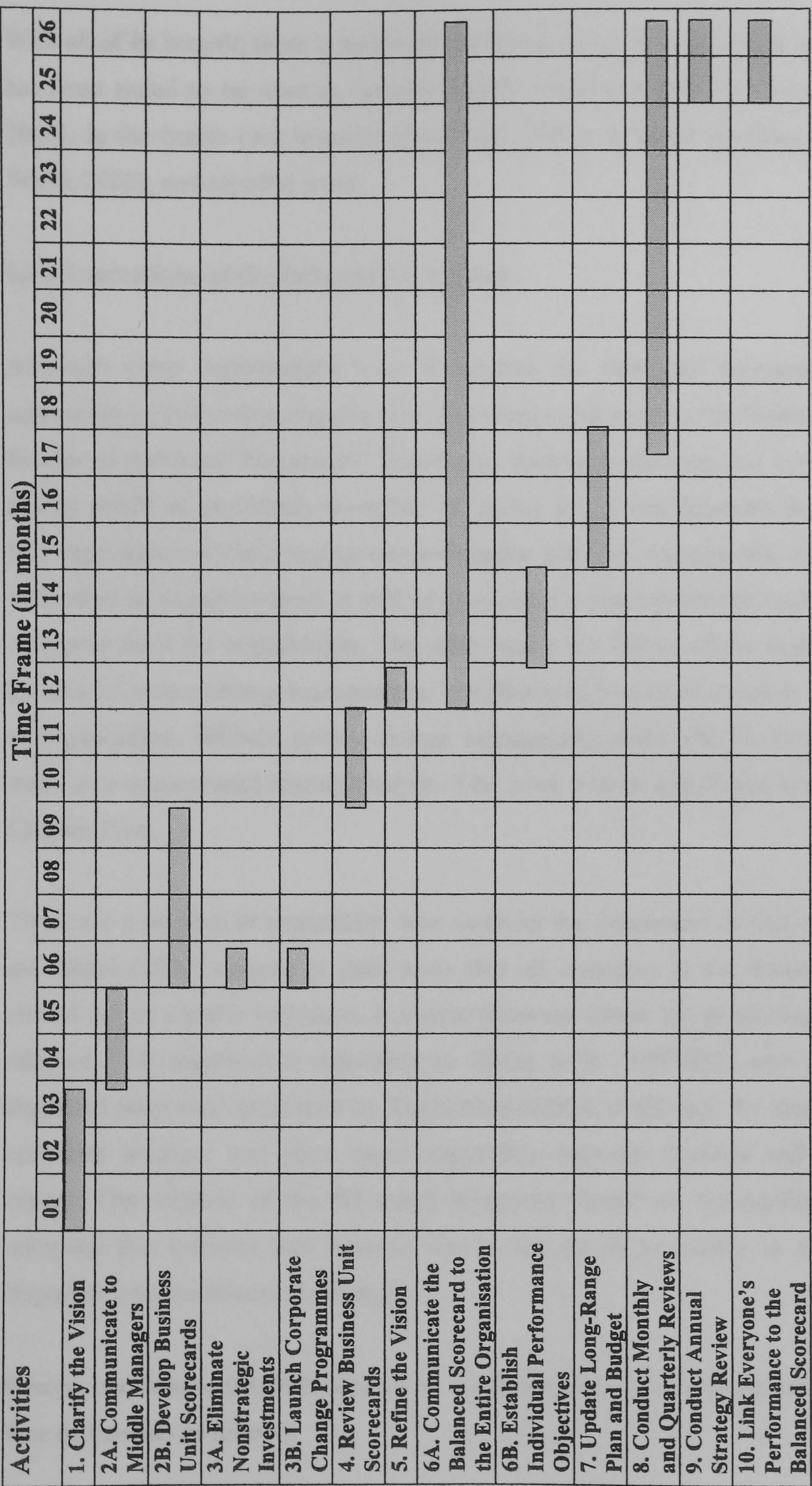


Figure 4.7 Timeline of the Balanced Scorecard implementation

Source: Adapted from Kaplan and Norton (1996b)

With all of its benefit, there is no doubt that this concept is widely used in all sectors. It has been stated to be used to measure supply chain performance (Brewer and Speh, 2000), in the health care industry (Aidemark, 2001), in hotel operations (Denton and White, 2000), and all other areas.

4.3.2 Limitations of the Balanced Scorecard

Although many organisations have found that the Balanced Scorecard helps them achieve their goals, some organisations fail when implementing the Balanced Scorecard. Similar to previous ‘fragmented’ knowledge such as motivation and reward theory or quality model as previously described in section 2.1, if the Balanced Scorecard is put into organisation without appropriate integration with the structure and culture, and also with other management tools, it will be considered a management fad and it will finally disappear from the organisation. The other reason for failure of the implementation is the lack of proper change management. The Balanced Scorecard certainly brings change to organisation. Without proper change management there will be strong resistance, leading to unsuccessful implementation. This issue will be considered later in details in Chapter Five.

There are a number of researchers who consider the drawbacks of this concept. Olson and Slater (2002) suggest in their study that all measures in the Balanced Scorecard should not be equally important. It should however follow the product-market strategy adopted. This argument is supported by Butler et al. (1997:253) who argue that the Balanced Scorecard developed by Kaplan and Norton overlooks ‘the importance of the corporate mission’ and place equal importance between financial and non-financial aspect. This version of the Balanced Scorecard should not be applied for specific company that believes that financial results are not of secondary or not even equal importance to the drivers of strategy.

Epstein and Manzoni (1998) argue that implementation of the Balanced Scorecard can face difficulties as follows.

1. It is difficult to articulate a clear and shared view of the firm's strategy.
2. The Balanced Scorecard creates a workload for many people.
3. Companies may encounter resistance motivated by a desire to protect power base within the organisation.
4. There is lack of the consistency after implementing the Balanced Scorecard.

Norreklit (2000:65) examines 'the extent to which there is a cause-and-effect relationship' among four perspectives in the Balanced Scorecard and examines 'whether the Balanced Scorecard can link strategy to operational metrics'. The results show that the cause-and-effect diagram presented by Kaplan and Norton in the Balanced Scorecard is problematic in three ways. First it does not consider the dimension of time. The Balanced Scorecard is a static analysis, which does not consider time lag. It will be very difficult to conclude that improving performance drivers in any perspective will finally improve the financial performance.

The relationship between measures is another problematic issue. The causal relationship proposed by Kaplan and Norton in the Balanced Scorecard is not actually the true causality. In the causality, the cause-and-effect relationship can only be tested by empirical method. However some performance drivers and outcomes in the Balanced Scorecard only follow simple logic. For example, profitable customer may be the performance driver in customer perspective, which leads to high return on investment, which is performance outcome in financial perspective. This is not cause-and-effect relationship. It is however a simple logical conclusion since high profitable customer will certainly lead to high profit and will then lead to high return on investment.

The third weakness of the Balanced Scorecard relies on the interdependence of the four perspectives. This means that what is called 'the cause-and-effect' by Kaplan and Norton in the Balanced Scorecard can be in the opposite direction. Financial outcomes may also drive the learning and growth as the company has enough money to invest, customer may drive the internal business process because of the requests from the customer. Norreklit (2000) also suggests that the Balanced Scorecard should be

constructed by using two-way communication not top-down direction as proposed by Kaplan and Norton. This will enhance the capability of the Balanced Scorecard.

Dinesh and Palmer (1998) find that the concept of the Balanced Scorecard is similar to that of the management by objectives (MBO). Therefore there is tendency that the problems leading to failure of MBO can also lead to unsuccessful Balanced Scorecard. Similar to MBO, the Balanced Scorecard seems to also suffer from the partial implementation because it is a complex process and takes a long time to implement.

Heinz (2001) also suggests that there are few studies on how to connect the Balanced Scorecard concept to other management tools. Therefore organisation may be confused when they start to implement the Balanced Scorecard whether it should ignore all previous management tools that are currently implemented in the organisation or the Balanced Scorecard can work well with those tools.

Aidemark (2001) mentions two other weaknesses of the Balanced Scorecard; its mixed measurement without self-evident priorities, and its demand for management, education and information technology support.

4.3.3 The failure of the implementation of the Balanced Scorecard

Kaplan and Norton (2001:360), based on their experience of the Balanced Scorecard implementation in many organisations, identify two sources of the failure of the Balanced Scorecard implementation; the design and process failure.

1. Design failure

Poor Balanced Scorecard may lead to failure in the organisation. The poor designed Balanced Scorecard includes:

- The organisation constructs too few measures in each perspective therefore it fails to obtain a balance between leading and lagging indicators or financial and non-financial indicators.
- On the other hand, organisation may adopt too many indicators without identifying the critical few. In this case, the organisation will lose focus and cannot find any linkage between indicators.
- Measures selected to the scorecard do not tell the organisation's strategy. This happens when organisation tries to input all their Key Performance Indicators (KPIs) into each perspective without screening out the measures that are not linked to its strategy. Therefore the organisation's strategy is not translated into action, and the organisation does not obtain any benefit from the Balanced Scorecard.

2. Process failure

These failures are the most common causes of implementation failures. The possible failures include (Kaplan and Norton, 2001:361).

1. 'Lack of senior management commitment
2. Too few individuals involved
3. Keeping the scorecard at the top
4. Too long a development process; The Balanced Scorecard as a one-time measurement project.
5. Treating the Balanced Scorecard as a systems project.
6. Hiring inexperienced consultants
7. Introducing the Balanced Scorecard only for compensation'.

It is not only Kaplan and Norton who notice why the Balanced Scorecard fails, Schneiderman (1999) almost shares their view. According to his study, the Balanced Scorecard fails because

1. 'The independent (i.e. non-financial) variables on the scorecard are incorrectly identified as the primary drivers of future stakeholder satisfaction.
2. The metrics are poorly defined.
3. The improvement goals are negotiated rather than based on stakeholder requirements, fundamental process limits, and improvement process capabilities.
4. There is no deployment system that breaks high level goals down to the sub-process level where actual improvement activities reside.
5. A state of art improvement system is not used.
6. There is not and cannot be a quantitative linkage between non financial and expected financial results' (Schneiderman, 1999:7).

These causes of failure are mostly related to the fact that communication in organisation is not effective, so everyone in the organisation does not understand and even opposes to the concept. The Balanced Scorecard is not a one-time project, it is a continual process. It translates strategy to operational terms, aligns the organisation to strategy, makes strategy everyone's everyday job. All of these must be fully supported by senior management and the executive leadership is obviously required (Kaplan and Norton, 2001:361).

4.4 The Balanced Scorecard for a not-for-profit organisation

The difference between a not-for-profit organisation and a profit-making organisation is their objectives. Obviously the goal of a profit-making organisation is related to financial aspects, i.e. improving shareholder value, enhancing revenue growth, or increasing the Economic Value Added (EVA®). However those goals are not appropriate for a not-for-profit organisation. The other difference between these two kinds of organisation is the fact that normally in a private sector the customers both pay for the service and receive the service. However in a not-for-profit organisation, usually financial donors provide the financial resource paying for the service, while consumers receive it.

Kaplan and Norton (2001:134) recognise these differences and propose the modification of the architecture of the Balanced Scorecard. In this regard, the financial perspective is no longer placed at the top of the scorecard because financial success is not the primary objective of a not-for-profit organisation. The Balanced Scorecard architecture can be rearranged to place both consumers who receive the service and donors who pay for the service at the top of the hierarchy. Figure 4.8 illustrates the adaptation of the Balanced Scorecard framework to a not-for-profit organisation.

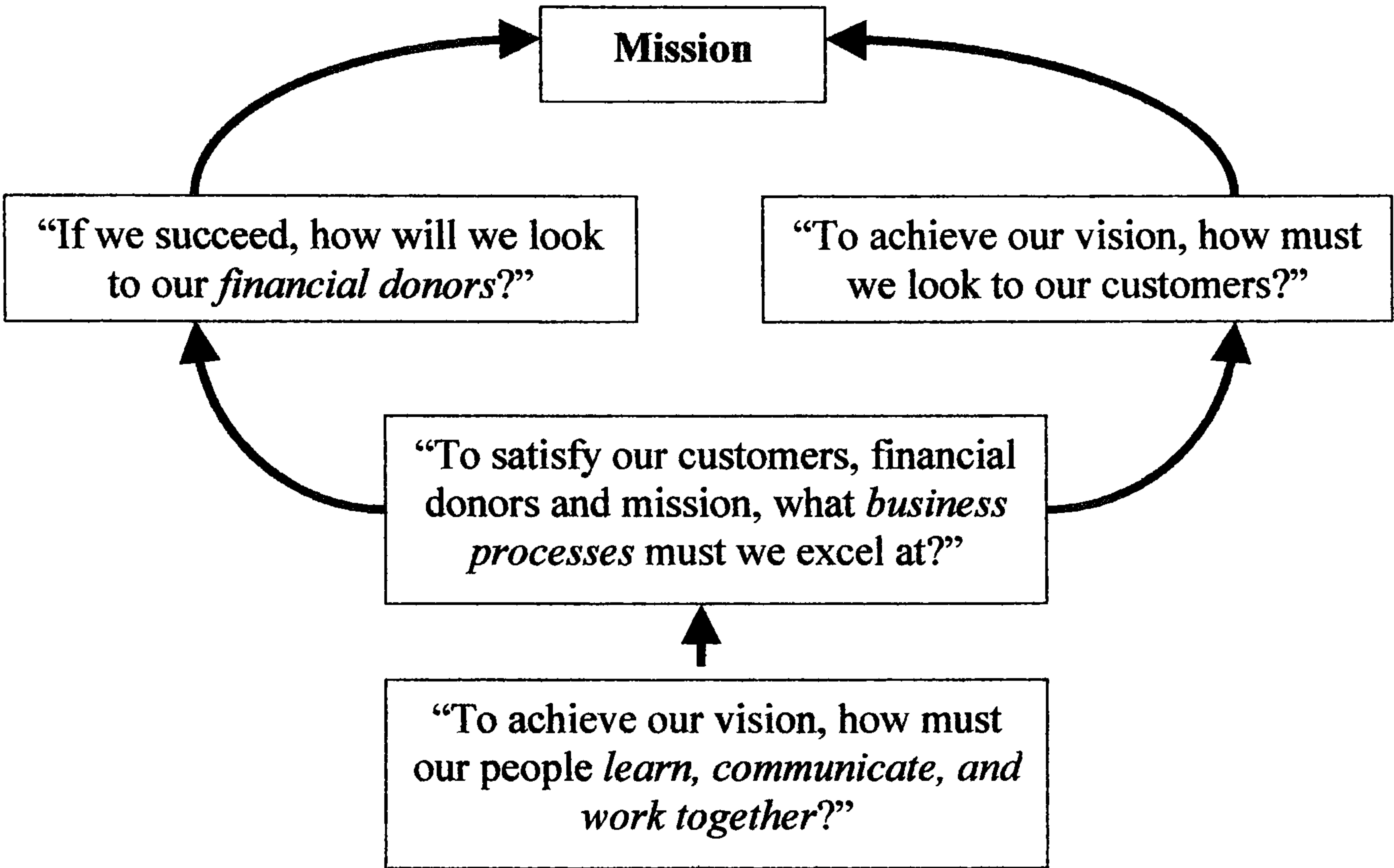


Figure 4.8 Adapting the Balanced Scorecard framework to a not-for-profit organisation

Source: Adapted from Kaplan and Norton (2001:135)

The two perspectives, learning and growth and internal business processes are very similar to those of the private organisation. The financial and customer perspectives, however, need to be adjusted. Kaplan and Norton (2001:136) propose modified financial and customer perspectives for public sector agencies, which include

1. Cost incurred

This perspective focuses on the importance of operational efficiency. The organisation should aim to reduce the cost required to deliver the benefits that support its mission.

2. Value created

This perspective emphasises the benefit to customers. However the measures used in this perspective are usually problematic because it is very difficult to quantify. For example, it is difficult to quantify financially the economic benefits in a country from improved education. Measures normally used in this perspective then are proxy measures such as percentage of students acquiring specific skills and knowledge, which reflects the benefits of their education.

3. Legitimising support

This perspective identifies the other important customers of a not-for-profit organisation, the donors, who pay for the services. They provide funding to an organisation. Therefore to ensure the sustainability of a not-for-profit organisation, the objectives of the donor must also be achieved.

Based on this modification, the Balanced Scorecard for a not-for-profit organisation can be illustrated in Figure 4.9

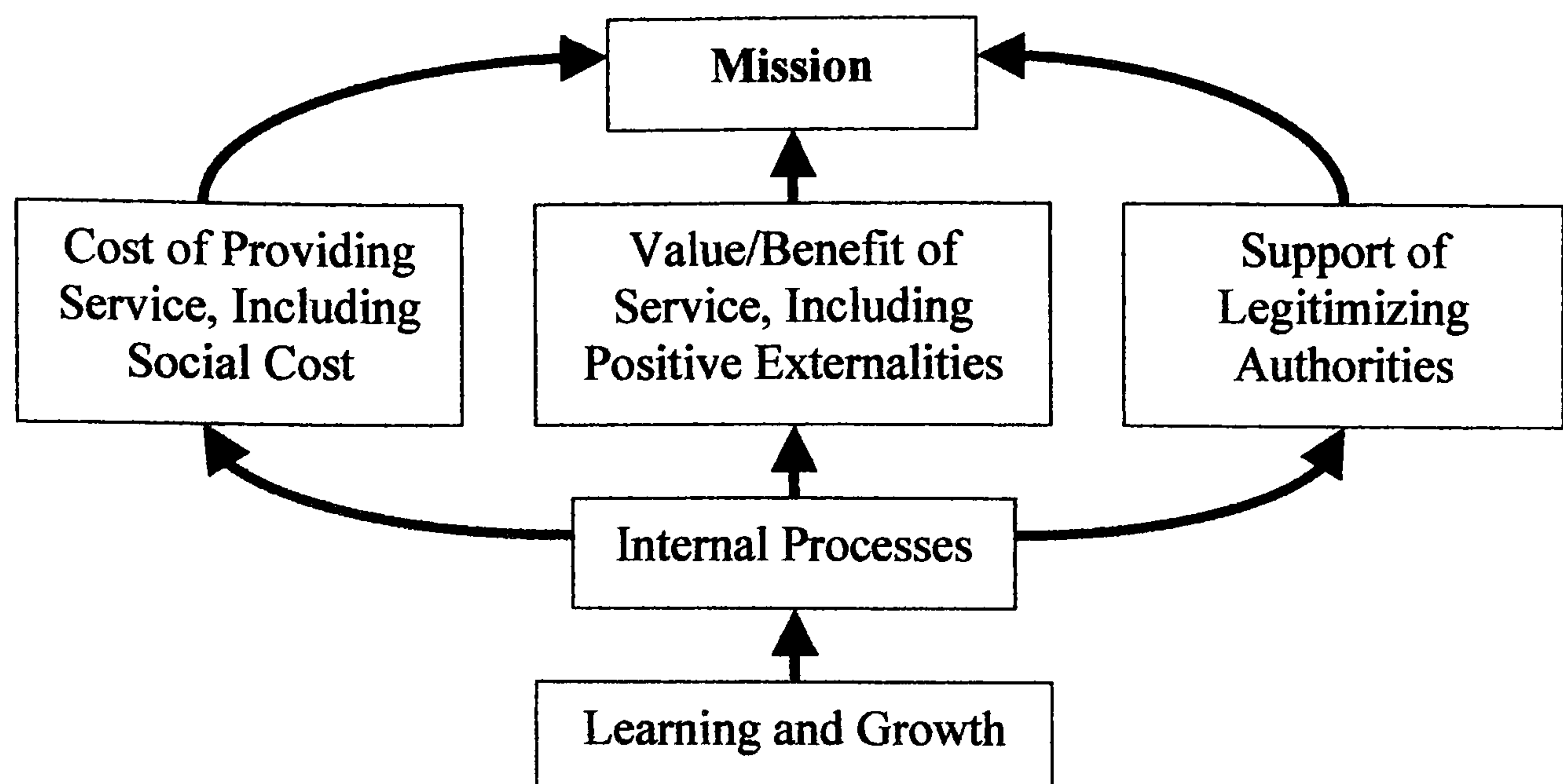


Figure 4.9 The Balanced Scorecard for a not-for-profit organisation

Source: Kaplan and Norton (2001:136)

The concept of the Balanced Scorecard is becoming popular among not-for-profit organisations especially in the United State. The examples of these organisation include the City of Charlotte, Department of Defense, the United Way of Southeastern New England, who provides various human service programmes, the May Institute, who provides high-quality behavioral health care, education, and rehabilitation programmes for children and adults, New Profit Inc., a Boston-based venture capital philanthropic fund, Duke Children’s Hospital, and Montefiore Hospital. All of these organisations claim that after adopting the Balanced Scorecard, their organisations have been improved significantly.

Olve et al. (1999:304) also propose another version of the Balanced Scorecard for the public sector. The four perspectives in the Balanced Scorecard for private sector have been adjusted as follows.

1. Performance focus

For a not-for-profit organisation, the ultimate aim is not related to finance. Therefore the measures in this perspective should be related to performance, which means the other benefits rather than the financial outcomes. The examples of performance measures for a public university are measures related to graduates in term of their number, quality, and occupation. These measures are primarily related to historic results.

2. Relationship focus

This perspective replaces the customer perspective in the Balanced Scorecard for private sector. Usually the customers for public sector are everybody who lives in same society. The main distinguish between the term 'customer' for private and public sectors is the fact that generally the ones who use the service in public sector do not fully pay for that service. Therefore there may be two types of customers in this sense for the public sector.

3. Activity focus

The term 'internal business process' in the Balanced Scorecard for the private sector can be replaced by activity focus because for the public sector, activities, not processes, are more related to the nature of a not-for-profit organisation.

4. Future focus

This final perspective matches learning and growth perspective. The question like 'what will infrastructure be like in the future' will be addressed in this perspective.

These four perspectives or focuses are linked as same as those of the Balanced Scorecard for the private sector. Figure 4.10 illustrates the generalisation of the Balanced Scorecard model to the public sector.

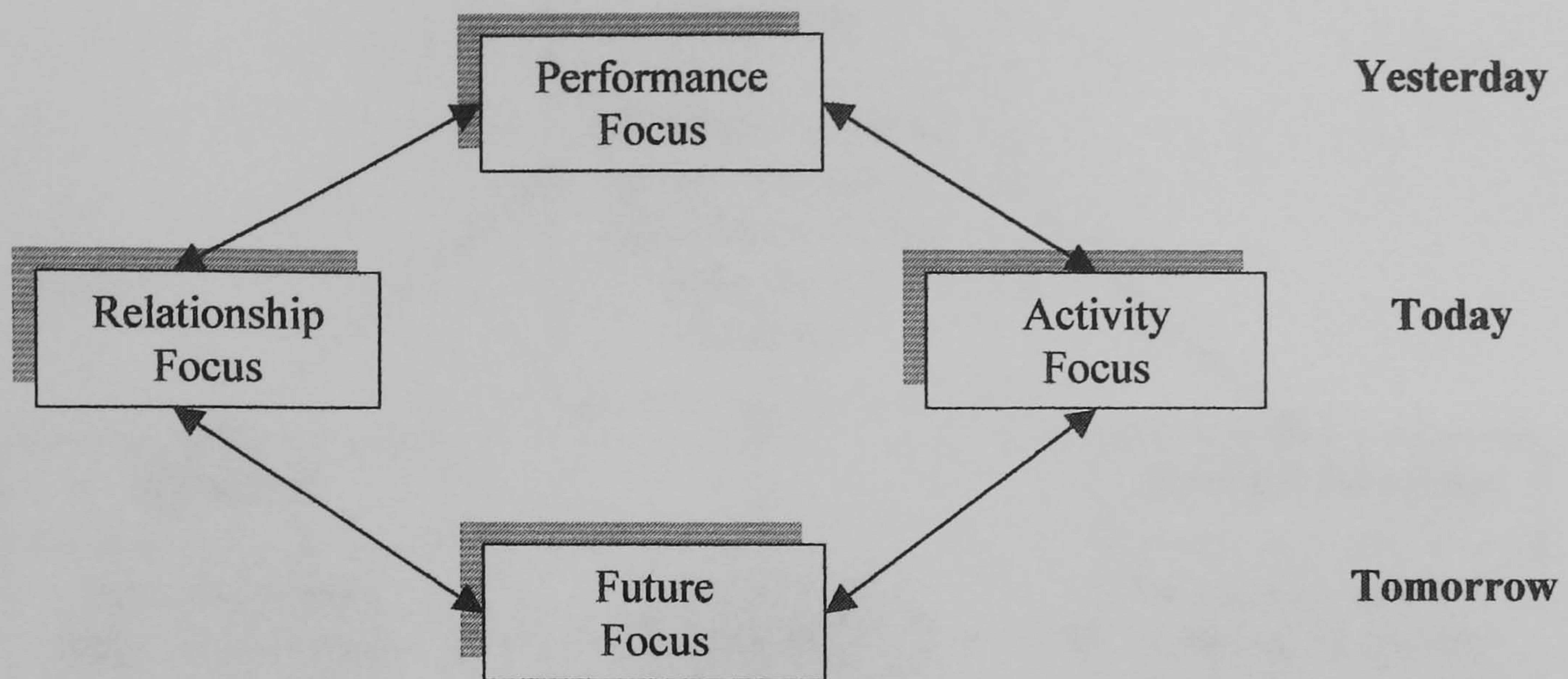


Figure 4.10 Olve et al.'s model of the Balanced Scorecard of the public sector

Source: Olve et al. (1999:305)

Niven (2003:33) also propose the adapting the Balanced Scorecard to fit the public and not-for-profit sectors. In his model, the mission of an organisation is moved to the top of the Balanced Scorecard. It then follows by customer perspective, which is usually driven by the internal processes. Employee learning and growth perspective is still needed as it provides the foundation for a well-constructed Balanced Scorecard. Finally no Balanced Scorecard is complete without a financial perspective. For the Balanced Scorecard for the public and not-for-profit sector, financial measures can be either drivers of customer success or constraints within which group must operate. Although the Balanced Scorecard for the not-for-profit sector is different than that of the private sector, one thing in common is that strategy remains at the core of the Balanced Scorecard. Figure 4.11 shows the Balanced Scorecard for the public and not-for-profit sectors based on Niven's model.

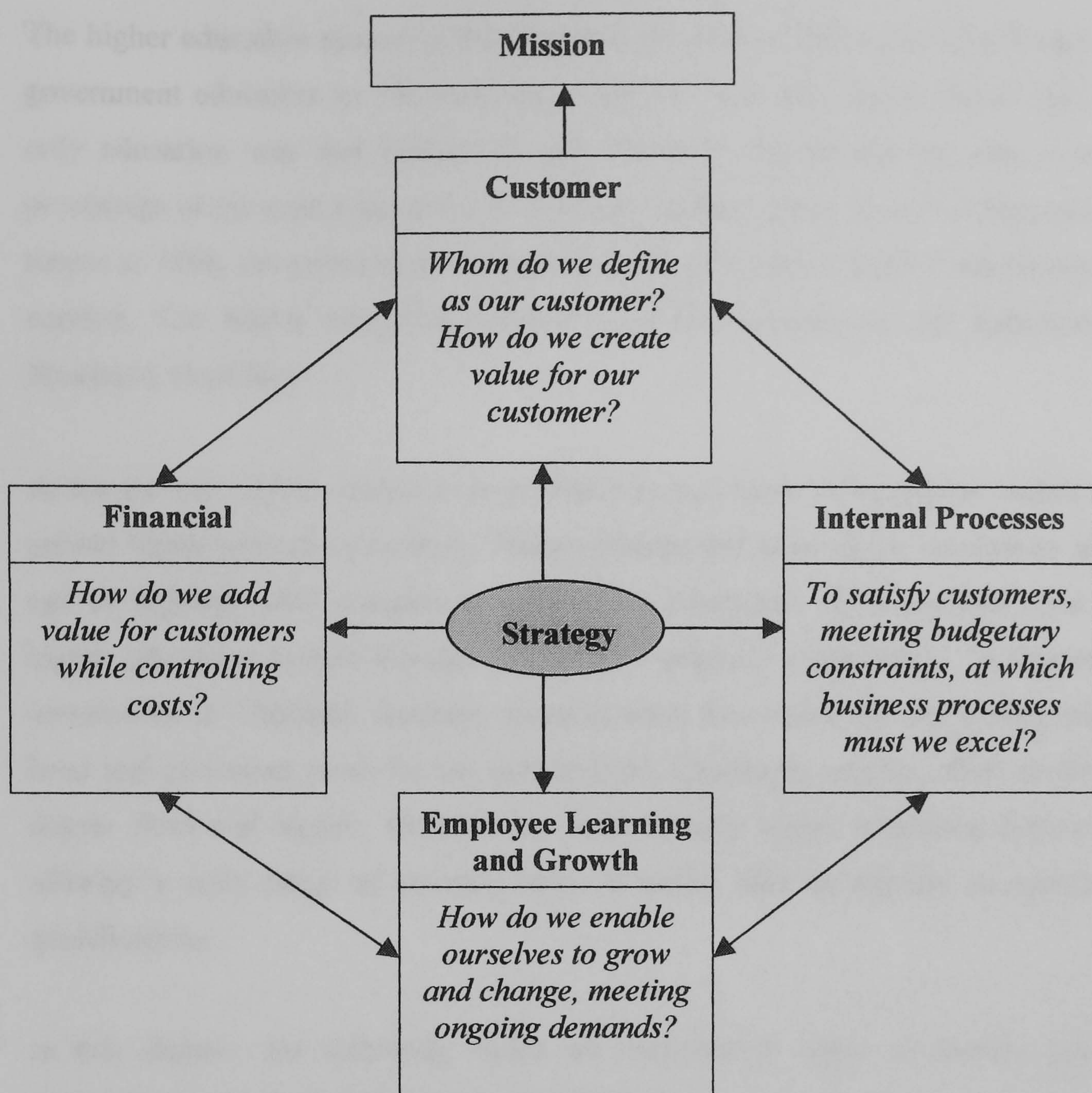


Figure 4.11 Niven's model of the Balanced Scorecard for the not-for-profit sector
Source: Niven (2003:32)

The concept of the Balanced Scorecard is also applied in the university sector. University of California, San Diego for example applies the Balanced Scorecard to its supporting units reflecting customer service and efficiency objectives. More universities in the United States, United Kingdom, and even in Thailand are now interested in this concept, some universities start to implement, while the others consider implementing it in near future. More details of the Balanced Scorecard for a university are explored later in Chapter Eight.

CHAPTER FIVE: THE UNIVERSITY IN THAILAND

The higher education system in the Thailand has evolved for centuries although the government education in Thailand dates only for over fifty years. Before that, the only education was that offered by the Buddhist monasteries for only a small percentage of the male population. After King Chulalongkorn (Rama V) assumed the throne in 1868, the government bureaucracy was reformed in order to modernise the country. The higher education systems were also established and subsequently flourished since then.

At the present, higher education is provided by two kinds of institution: public and private higher education institutes. Many students start their higher educations at the age of eighteen after completing compulsory education. Most students enter the higher education system through the national entrance examination. In almost all universities in Thailand, students spend at least four years for the undergraduate level and two more years for the master level. University usually offers studies at degree level and higher. Thailand has over seventy higher education institutions offering a wide range of courses, most of which lead to degrees or equivalent qualifications.

In this chapter, the following topics are explored in order to provide general information of the university system in Thailand.

1. *Brief history of the higher education system in Thailand.* This section attempts to provide information of how the system has been established over the years, what the major events were in the past, and which system remains or has been changed.
2. *Current situations of the universities in Thailand.* This section overviews current university system including important statistics and future trend of the university system in Thailand.

3. *Quality assurance for a university in Thailand.* This is a new concept, which is being implemented in every university in Thailand. It is therefore worth investigating why and how it is going to apply to a university.
4. *Culture in Thai university.* This section aims to provide the information on a typical culture of Thai university. This information is later used when data is analysed in Chapter Seven and for building and implementing model for university performance measurement system, which is presented in Chapter Eight and Nine respectively.
5. *Change management in universities in Thailand.* The final section attempts to present the methodology on managing change, which is very critical to the success of the implementation of the new performance measurement framework in a university. The information in this section is later used in Chapter Nine when the implementation of new performance measurement framework is proposed for university management.

5.1 History of the higher education system in Thailand

According to the classification made by the Commission on Higher Education, the Ministry of Education, the history of higher education in Thailand can be divided into three periods: the early modernisation period (1889-1931), the post-revolution period (1932-1949), and the development planning period (1950-present).

5.1.1 The early modernisation period (1889-1931)

The beginning of higher education in Thailand was marked by the establishment of the country's first medical school, Siriraj Hospital, in 1889. Subsequently, the law school in the Ministry of Justice was established in 1897 along with the Royal Pages School (later known as the Civil Service College) in 1902 and the Engineering School at Hor Wang in 1913. At that time, those institutions were found in order to train Thai people for employment in government civil service. After that Chulalongkorn University was established by Royal Decree in 1917. It was elevated from the Civil Service College and became the first university in Thailand. The

Schools of Medicine, Engineering, Faculties of Arts and Science, and Law and Political Science were also incorporated into the university. This period ended when there was political revolution in 1932, which changed the Thai political system and also the education sector enormously.

5.1.2 The post revolution period (1932-1949)

During this period, there was a need for people to be educated on the principles of democracy after the political revolution in 1932 when Thailand adopted parliamentary democracy. Accordingly, the University of Moral and Political Science, now known as Thammasat University was established in 1933. Eleven years later, three more universities were founded. These universities were the University of Medical Science, now known as Mahidol University, the Agriculture University, now known as Kasetsart University, and the Fine Arts University, now known as Silpakorn University. These universities focused on producing competent graduates in various disciplines to serve the government. The post revolution period ended when there was the establishment of long-term national economic plan in 1950. This plan had a significant impact on the Thai education system and it was the beginning of the development planning period.

5.1.3 The development planning period (1950 onwards)

After the establishment of the National Economic and Social Development Board (NESDB) with responsibilities to develop the long-term national economic plans in 1950, the higher education system in Thailand expanded and changed tremendously. Within ten years of the release of the first national economic plan in 1961, three regional universities were established; Chiang Mai University in the north, Khon Kaen University in the northeast, and Prince of Songkla University in the south. This expansion followed the national economic plan encouraging the decentralisation of the education system. Engineering, agriculture, medicine, and natural science were given priority as they all assisted national economic and social development.

In the late 1960s and early 1970s the National Institute of Development Administration (NIDA) was founded as a higher education institution specialising in

social and national development. In 1967, the Asian Institute of Technology (AIT) was also opened as an international graduate school, specialising in sciences and engineering.

Other higher education institutions were formed through the merger of existing schools and colleges. King Mongkut's Institute of Technology was also created in this way. It was founded in 1971 through the combination of several technical schools. Maejo Institute of Agricultural Technology, now known as Maejo University was also upgraded from a college in 1975.

Private universities also came into the picture around this time. The Sixth National Higher Education Development Plan (1989-1991) encouraged the establishment of private institutions in order to improve standards of the national education. The expansion of private university sector was witnessed both in Bangkok area and in the provinces. Private universities also started to offer international programmes providing internationalisation to Thai people.

In last decade, six more regional universities were created. These universities included Burapha University in the east, Naresuan University in the north, Mahasarakham University in the northeast, Thaksin University in the south, Ubon Ratchathani University, once part of Khon Kaen University, in the northeast, and Suranaree University of Technology, also in the northeast.

Two existing open universities in Thailand, which are Ramkhamhaeng University and Sukhothai Thammathirat University, were opened in 1971 and 1979 respectively. These universities were found to serve the growing demand for access to university system in Thailand. Both universities make use of modern technologies to reach a large number of students. Presently these two universities share over half of all higher education enrolments in Thailand.

In 1990s the government encouraged the establishment of an autonomous university, Suranaree University of Technology, as the first public university to leave the government bureaucracy system. In this system the government provides financial support in the form of block grants. Wilailuk University set up in Nakhon Si

Thammarat is the second of this kind, followed by Mae Fah Luang University and King Mongkut's University of Technology Thonburi. The government hopes that these autonomous universities will become a model for other public universities in Thailand seeking autonomy in the future.

Recently, the National Scheme of Education of 1992 introduced the national educational system, focusing on continuous and lifelong learning and promoting wisdom, spiritual, physical, and social development. It also ensured that an opportunity was provided for all Thai citizens to access various forms of education, both in university-related system and through learning process in any kinds of form.

5.2 Current situation of the universities in Thailand

Before discussing the situation of universities in Thailand, it is worth investigating the whole educational system in Thailand in order to provide a clear picture where the university is placed in the system.

5.2.1 Thailand education system

There are two main kinds of education in Thailand. One is the school-related system, while the other is related to life-long learning process. The former is normally provided by educational institutions and uses curriculae specified for various levels and types of education. The latter, however, is in the form of self-learning from many sources.

Education in a school-related system can be divided into four levels as follows.

1. *Pre-school education*: This level aims to provide childcare and development of children in many aspects such as physical, psychological, mental, emotional, and personality in order to prepare children for higher levels of education. The institutions related to this level include daycare centre, kindergarten, and child development centre.

2. *Primary education*: This level aims to provide a basis for student to acquire literacy and arithmetic ability, and also to instil morality, ethics, and basic knowledge and ability.
3. *Secondary education*: This level can be divided into two main levels: lower secondary and higher secondary education. Lower secondary education focuses on promoting the student's knowledge and abilities beyond the primary level in order to enable them to identify their needs. The higher secondary education, on the other hand, aims to enable students to progress and acquire the knowledge to further study in higher education or pursue a career.
4. *Higher education*: There are three levels in this category: sub Bachelor's degree level, Bachelor's degree level, and postgraduate level. The sub Bachelor's degree level aims to develop students' knowledge and vocational skills in order to develop their entrepreneurship capability or to get jobs. The Bachelor's degree level aims to develop students' knowledge and skills in various principles according to their interests. The focuses are on the ability to apply theories to practices and to create and disseminate knowledge to develop themselves and society. The final level is the postgraduate level. This level aims to develop students' specialised knowledge and skills to prepare them for academic progress and excellence. The focuses are then on the field of research and development of knowledge and technology.

In addition to these four levels of education in a school-related system, there are educations for specific needs and targeted group, which include.

1. *Teacher education*: This education attempts to promote and develop teachers. The focus is on morality, knowledge, as well as teaching abilities and skills.
2. *Vocational education*: This kind of education attempts to develop vocational knowledge to enable learners to work as individuals or paid workers. The vocational education can be of two types: formal or informal. In the formal system, occupational knowledge and skills are developed to be relevant to

each level of education from primary to higher levels. On the other hand, in the informal system, the education is in the form of short-course training for those who need to upgrade their knowledge and skills. The examples are dancing, music, or sports.

3. *Special education*: It aims to provide education to students who are handicapped physically, mentally, psychologically, or emotionally. This education can be delivered either in general educational institutions or special institutions. It ranges from pre-school to higher education level.

Education, ranging from primary education to postgraduate level, are mostly governed and monitored by the Ministry of Education. There are five main units working under the Ministry; the Office of the Permanent Secretary, the Office of the Education Council, the Office of the Basic Education Commission, the Commission on Higher Education (formerly the Ministry of University Affairs), and the Office of the Vocational Education Commission. The organisation chart of the Ministry of Education is shown in Figure 5.1.

5.2.2 The university system in Thailand

In Thailand there are two kinds of university: public universities and private universities. For public universities, each university has its own Act that empowers the University Council to govern the university. Usually a university is operated by the President who adopts policy from the University Council. The Council consists of Chairman, President, Deans, Directors of Institutes in a university, and other qualified persons who are not employed by a university. Apart from the University Council, the Dean's Council and the Faculty Senate may take a major role of governing a university.

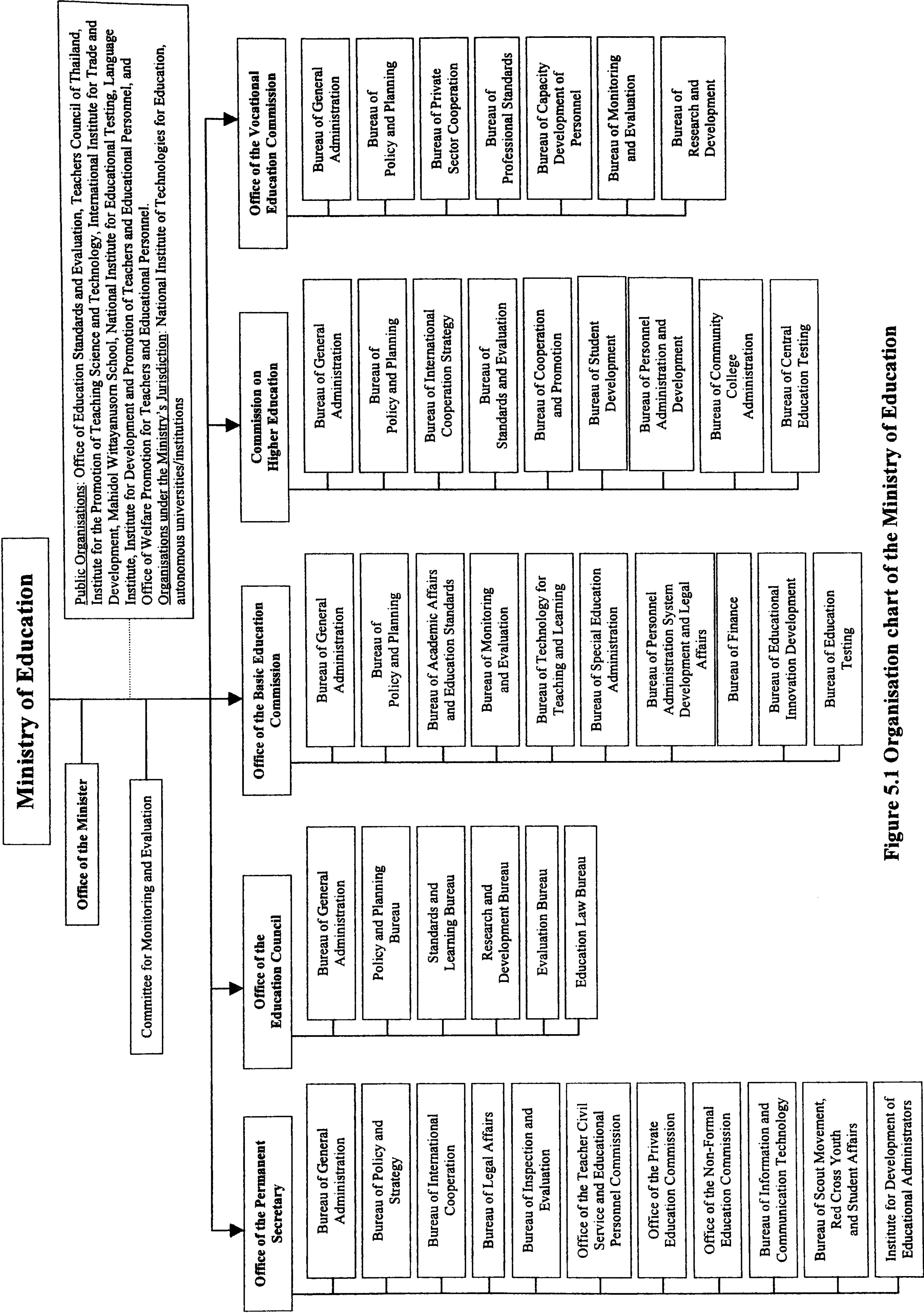


Figure 5.1 Organisation chart of the Ministry of Education

Recently, the government has policy that all public universities should become autonomous and leave the central government system. This means that a university must establish its own administrative structure and budgeting system. This enables a university to manage its organisation efficiently and effectively without large funding support from the government. So far Suranaree University of Technology, Walailak University, King Mongkut's University of Technology Thonburi, and Mae Fah Luang University are four universities that operate under this system.

In 1972 public universities established a Council of University Presidents of Thailand in order to share opinions and experience among high-level executives by meeting regularly. This organisation also serves as the coordinating point for mutual assistance and cooperation among the members. It also gathers recommendations on the relevant issues from the members and reports the government agencies such as the Commission on Higher Education under the Ministry of Education for consideration.

For private universities, the Commission on Higher Education (formerly the Ministry of University Affairs) is also responsible for providing advice to the Ministry of Education on relevant regulations relating to standards and accreditation. It is also responsible for considering granting approval for academic programmes offered by private universities. Similar to a public university, each private university has its own council and organisation structure to govern the university. Private universities formed the Association of Private Higher Education Institutions of Thailand in 1969 and adopted their current name in 1979. This association also aims to create cooperation among its members and related government agencies.

Presently, Thailand has seventy-eight higher education institutions; both universities and colleges. These higher education institutions consist of twenty-four public institutes and fifty-four private institutes. Table 5.1 provides information of the higher education institutions in Thailand.

Type of Institution	Number	Percentage
Grand Total	78	100%
1. Public institute	24	31%
1.1 Limited Admission University	18	23%
1.2 Open University	2	3%
1.3 Autonomous University	4	5%
2. Private institute	54	69%
2.1 University	23	29%
2.2 College	31	40%

Table 5.1 Number of universities/institutes classified by types of institution in academic year 2002

Source: Ministry of University Affairs (2002)

The total number of students currently enrolled in these institutions is approximately 1.27 million with more than 400 thousands new enrolments each year. The ratio of the total enrolment in public institutes to the total enrolment in private institutes is 80:20. However enrolments in academic year 2002 were in the ratio of 77:23. This shows a trend toward private education, as the government has encouraged. For graduates, the numbers of graduates in academic year 2001 are almost 180 thousands with 74% from public institutes and the rest from private institutes.

Table 5.2 illustrates the number of new and total enrolments in academic year 2002 and number of graduates in 2001 classified by types of institution.

Type of Institution	New Enrolment	Total Enrolment	Graduate
Grand Total	400,787	1,273,096	179,071
1. Public Institute	308,841	1,022,354	131,154
1.1 Limited Admission University	102,420	317,821	72,706
1.2 Open University	198,891	684,138	54,522
1.3 Autonomous University	7,530	20,395	3,926
2. Private Institute	91,946	250,742	47,917
3. Public: Private	77:23	80:20	74:26

Table 5.2 The number of new and total enrolments in academic year 2002 and number of graduates in 2001 classified by types of institution

Source: Ministry of University Affairs (2002)

Considering total enrolment of students, 88% are in the level of Bachelor's degree. Only public institutes offer the lower than Bachelor's degree and Graduate diploma.

For the Master's degree, 90% are offered by public institutes and the ratio is increased to 99% for Ph.D. level. The number of total enrolment classified by types of institution and levels of education are shown in Table 5.3.

Types of Institution	Levels					
	TT	LB	B	GD	M	P
Grand Total	1,273,096	13,861	1,122,812	4,087	126,123	6,213
1. Public institute	1,022,354	13,861	884,189	4,087	114,081	6,136
1.1 Limited Admission University	317,821	2,433	224,981	3,872	81,349	5,186
1.2 Open University	684,138	11,428	643,164	129	28,845	572
1.3 Autonomous University	20,395	0	16,044	86	3,887	378
2. Private Institute	250,742	0	238,623	0	12,042	77
3. Public: Private	80:20	100:0	79:21	100:0	90:10	99:1

Table 5.3 The number of total enrolment classified by types of institution and levels of education

Source: Ministry of University Affairs (2002)

Note: TT = Total, LB = Lower than Bachelor's, B = Bachelor's, GD = Graduate Diploma, M = Master's, P = Ph.D.

Considering graduates, in academic year 2001, 73% are from public institutes. However the percentage drops to 68% if only Bachelor's degree level is considered. Table 5.4 illustrates number of graduate classified by types of institution and levels of education in academic year 2001.

Types of Institution	Levels					
	TT	LB	B	GD	M	P
Grand Total	179,071	7,924	137,339	1,447	31,659	702
1. Public institute	131,154	7,924	92,864	1,447	28,220	699
1.1 Limited Admission University	72,706	1,695	48,157	1,376	20,799	679
1.2 Open University	54,522	6,229	41,476	14	6,803	0
1.3 Autonomous University	3,926	0	3,231	57	618	20
2. Private Institute	47,917	0	44,475	0	3,439	3
3. Public : Private	73:27	100:0	68:32	100:0	89:11	99:1

Table 5.4 The number of graduate classified by types of institution and levels of education in academic year 2001

Source: Ministry of University Affairs (2002)

Note: TT = Total, LB = Lower than Bachelor's, B = Bachelor's, GD = Graduate Diploma, M = Master's, P = Ph.D.

The total number of staff within public universities is approximately 52 thousand, making the average staff-student ratio 1:20. There are two kinds of staff in public universities: government officials and university staff. The difference between these two is that university staff are not employed directly by the government and are not considered as government officials but are hired by each institution. The university staff are employed in preparation for the institution that is becoming autonomous. The government aims to transfer all government officials to university staff in the near future, when all public universities become autonomous. There are also other types of staff regarding to their duties. Staff can be categorised into three types: lecturer, academic assistant, and administrative staff. Most of staff are lecturers (42%), followed by administrative staff (32%), and academic assistants (26%). Table 5.5 demonstrates the number of academic staff and nonacademic staff in public universities in the fiscal year 2002.

Government Official			University's staff		
Line	Number	%	Line	Number	%
Total	46,898	100%	Total	5,290	100%
Line A (Lecturer)	19,905	42%	Academic Line (A)	2,151	41%
Line B (Academic Assistant)	11,960	26%	Supporting Line (B&C)	3,139	59%
Line C (Administrative staff)	15,033	32%			

Table 5.5 The number of academic staff and nonacademic staff in public universities in fiscal year 2002

Source: Ministry of University Affairs (2002)

Among academic staff in public universities, more than half are lecturers, 25% are assistant professors and 19% are associate professors. In the fiscal year 2002, there are only 307 professors in Thailand. Table 5.6 illustrates number of academic staff in public universities classified by academic positions in fiscal year 2002.

Academic Positions	Government official		University's staff		Total	%
	No.	%	No.	%		
Total	19,905	100%	2,151	100.00	22,056	100%
Lecturer	10,049	51%	1,921	89%	11,970	54%
Assistant Professor	5,399	27%	132	6%	5531	25%
Associate Professor	4,161	21%	87	4%	4248	19%
Professor	296	1%	11	1%	307	2%

Table 5.6 The number of academic staff in public universities classified by academic positions in fiscal year 2002

Source: Ministry of University Affairs (2002)

Table 5.7 demonstrates the number of academic staff in public universities classified by education qualifications.

Degrees	Number	%
Total	19,905	100.00
Bachelor's	2,699	14%
Master's	10,852	54%
Ph.D.	6,354	32%

Table 5.7 The number of academic staff in public universities classified by education qualifications

Source: Ministry of University Affairs (2002)

The total national budget for fiscal year 2002 is approximately 1 trillion Baht. 22% goes to the education sector. In the budget for education sector, 32 billion Baht (3% of total national budget) goes to Ministry of University Affairs (it is now the Commission on Higher Education under the Ministry of Education). This budget is used for operation and investment. If classified by programme, most of the budgets from the Ministry of University Affairs are used for higher education administration (80%). The details of budget are illustrated in Table 5.8.

Items	Million Baht	%
1. National Budget	1,023,000	100%
2. Education Sector Budget	222,990	22%
3. Ministry of University Affairs Budget	32,036	3%
3.1 Operational budget	25,751	80%
3.2 Investment budget	6,285	20%

Table 5.8 The National budget, education sector budget, in comparison to the budget of the Ministry of University Affairs in fiscal year 2002

Source: Ministry of University Affairs (2002)

5.2.3 Future trend of the university system in Thailand

As Thailand’s economy continues to grow every year, there are large demands for qualified workforces in the market, especially in some areas. Therefore it is very important to the country to produce qualified graduates to serve the market needs, and the following issues are increasing in importance.

1. Quality and excellence of the university system

The government, through the Commission on Higher Education, encourages each university to offer an international standard level of higher education, and to produce qualified graduates to serve the growing market demands. The main focus is on academic excellence in research, teaching, and social service.

2. Access and equity of the university system

The government attempts to provide higher education to as many people as possible. Thai people will have greater access in attending university. More universities, both public and private, will be established in the regions. At the present, the Commission on Higher Education (formerly the Ministry of University Affairs) aims to increase the percentage of the age-group population gaining access to higher education from currently 6% to 40% in the year 2020 (Ministry of University Affairs, 2003a).

3. Efficiency and accountability of the university system

This is an important issue in providing mass higher education. The government will enhance cost effectiveness in the university by encouraging university autonomy and self-governance. The Commission on Higher Education will take a major role in supporting the development of university autonomy in line with the national development plan.

4. Relevance and delivery of the university

It is important to produce graduates to satisfy high demand in the market. It is even more important to know what kind of graduates each sector needs, therefore the research will be conducted to identify the manpower requirement in every field. At the present, according to the Commission on Higher Education's policy, there are current shortages in Sciences, Mathematics, Engineering, Computer Science, Medical Science, Dentistry,

Pharmaceutical Science, Allied Health Science, Nursing, Veterinary Science, Agricultural Industry, Industrial Education, Architecture, Accounting, Language, and Gems and Jewelry.

5. Internationalisation and regionalisation

With movement toward globalisation in every sector, collaborative relationships among domestic and foreign universities are encouraged. In Thailand, the numbers of international programmes are increasing every year. The so-called 'exchange programme' is becoming popular in every university, and not only students but also academic staff benefit from this kind of programme.

6. Privatisation and Corporatisation

This is probably a long-term goal of the government for the university system. Each university must be able to survive with limited funding from the government. To achieve this target, the quality of university must be assured, otherwise the university may reduce academic standards in order to reach financial objectives. So the quality assurance of the university is becoming one of the most important issues, and will be discussed later.

In order to achieve all these objectives, the government, through the Commission on Higher Education, is focusing on development in the areas that have the shortages of manpower. The budget allocation system will be improved or even renovated to give universities more flexibility to perform their functions effectively and efficiently, and gradually become autonomous. The role of information technology will be enhanced, as this will increase the access to higher education and will also support teaching, learning, and research within a university. Experts in every field will be asked to participate in the process of higher education as they can provide valuable advice to students and academic staff. Both the academic aspects and student activities will be promoted as this helps produce quality graduates. Finally, a university will also be encouraged to participate in regional economic and social development.

5.3 Quality assurance for the university in Thailand

As mentioned above, each public university in Thailand is encouraged to become autonomous and be able to survive with very limited funding support from the government. In order to assure that, as a result of this, the quality of higher education is not lowered and society gets value for their investment in the higher education, the government has established a quality assurance policy to promote the quality in the production of graduates. According to the Commission on Higher Education, quality assurance in higher education in Thailand refers to activities that enable society to be assured that higher education institutions produce the quality graduates to serve society.

The concept the quality assurance for higher education is not new. It has been emphasised for almost a decade in the eighth National Economic and Social Development Plan (1997-2001). Higher education institutions are encouraged to improve academic standards to assure that they can produce graduates to serve market demand. The Commission on Higher Education has played a significant role in quality improvement, and requires all public universities to improve their quality. Furthermore the Commission on Higher Education also provides and develops an appropriate quality assurance system, and expects each higher education institution to establish matching internal quality assurance system within its own organisation. This quality assurance system is a tool in the development of higher education management, but it can also be used as the evaluation system. In the push to make all public universities autonomous and the only way to ensure public accountability requirements, which will lead to the international competency, is to enable higher education institutions to develop their own internal quality assurance system. To make such systems work, a quality audit mechanism must be established in order to gain wider acceptance in the public. All units in the higher education institution must be encouraged to participate in quality assurance activities. Finally, information and results of institutional quality assurance activities must be published openly so that a higher education institution's stakeholders, such as parents and students, will be well informed to make important decisions.

In this section, four topics related to quality assurance system are explored; the process of quality assurance for higher education, aspects of criteria for evaluation of higher education institutions, external quality assurance for higher education, and performance indicators for higher education in Thailand.

5.3.1 The process of quality assurance for higher education

Quality assurance can be divided into two parts: internal quality assurance and external quality assurance. Internal quality assurance refers to quality control, which aims to gain trust from all staff within a university. According to the Commission on Higher Education, the process of internal quality assurance consists of three elements as follows.

1. Quality control: a system to control the quality of everything that has an effect on the quality in a university.
2. Quality auditing: a system to determine whether the activities that lead to quality match the plans of management to achieve high quality.
3. Quality assessment: a procedure to examine the activities implemented in order to meet quality standards within the organisation.

External quality assurance refers to externally applied mechanisms that examine an organisations quality system. The process of external quality consists of three elements as follows.

1. Quality auditing: the examination by an external organisation to evaluate the internal quality of university. It attempts to audit how the university quality system works, and determines whether the quality activities work as planned.
2. Quality assessment: the assessment visit, gathering information on quality assurance, and providing a judgment on the quality of higher education.

3. Quality recognition: a team evaluation to support continuous quality improvement.

Table 5.9 and Figure 5.2 illustrate the relationship between the internal and external quality assurance.

Internal Quality Assurance		External Quality Assurance	
Organisation	University / Institution	Organisation	Ministry of Education
Process:	Quality Control & Quality Control Systems Quality Auditing Quality Assessment	Process:	Quality Auditing Quality Assessment Quality Recognition

Table 5.9 Relationship between internal and external quality assurance
Source: Ministry of University Affairs (2003b)

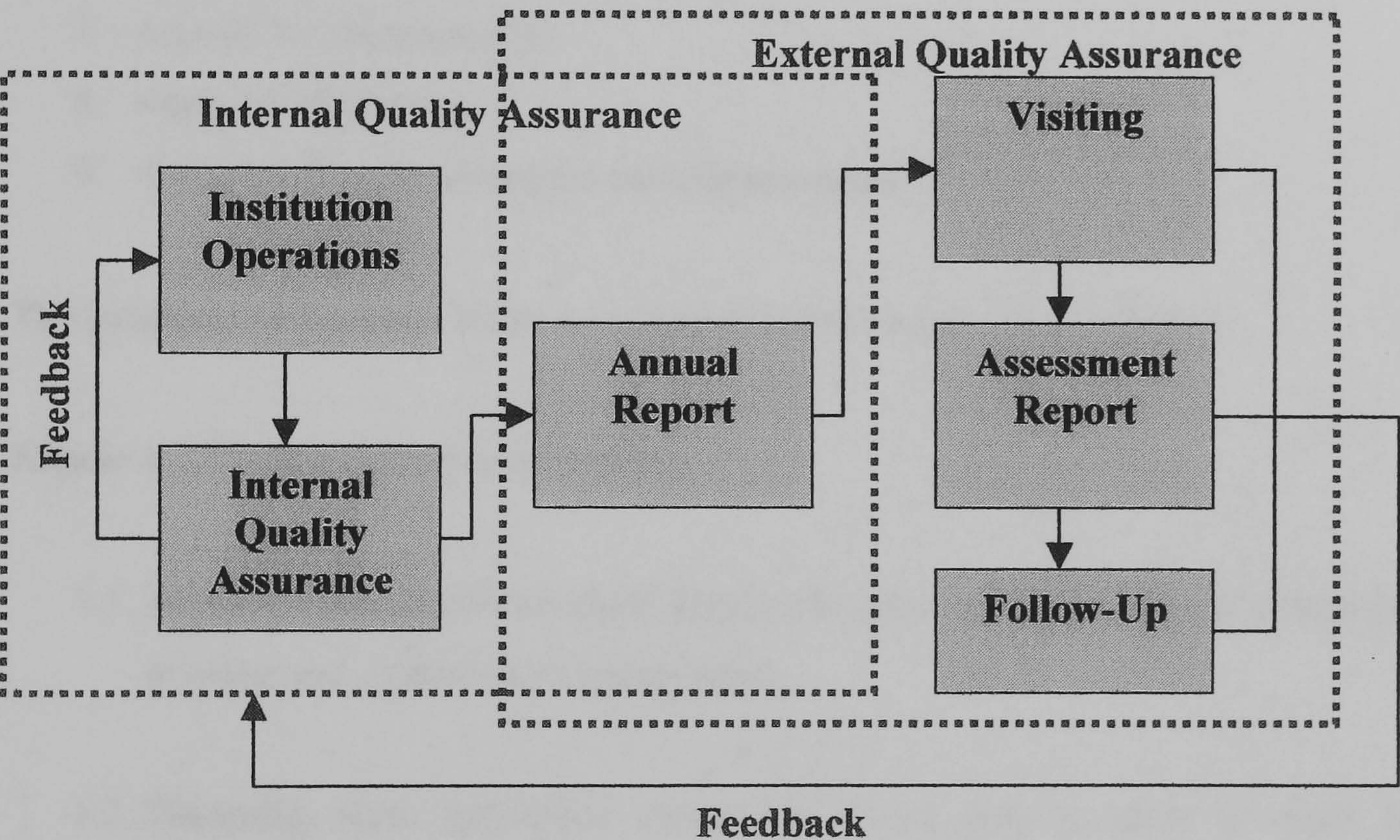


Figure 5.2 Relationship between internal and external quality assurance
Source: Adapted from Office for National Education Standards and Quality Assessment (2002)

In this process, each institution develops its own internal quality assurance and produces an annual report. This report is then reviewed by the external organisation for external quality assurance, before assessment visit. After the visit, the assessment report is completed and submitted to the institution as the follow-up system. This

procedure assists institution in developing and improving its internal quality assurance to meet the expected standard.

5.3.2 Aspects of criteria for evaluation of higher education institution

The Commission on Higher Education defines the following aspects for criteria to evaluate the quality of university:

1. Aspect 1: Mission/objective/planning
2. Aspect 2: Teaching and learning
3. Aspect 3: Student recreation activities
4. Aspect 4: Research
5. Aspect 5: Social academic service
6. Aspect 6: Preservation of arts and culture
7. Aspect 7: Administration
8. Aspect 8: Budgeting
9. Aspect 9: Quality assurance and enhancement

The guideline of how university is evaluated in each aspect is as follows:

Aspect 1: Mission/objectives/planning

- 1.1. **Mission and objectives:** Each higher education institution should determine mission and objectives of organisation.
- 1.2. **Planning:** Each institution should set up the plan in order to reach its mission and objectives.
- 1.3. **Assessment of planning and project:** Each institution should periodically evaluate the results of the planning and projects and adapt the plan if the environment has changed.

Aspect 2: Teaching and learning

- 2.1. **Curriculum:** Each institution should develop the contents in curriculum and change it periodically to ensure that curriculum is always up to date.
- 2.2. **Faculty:** There should be a job descriptions and qualification requirements for faculty. The number of faculty should be enough to teach students, as shown in the staff-student ratio. The faculty should also focus on student personal development. Each faculty should also have minimum working teaching load, and there should also be assessment of teaching, research and academic service. The other factors in this criterion also include recognition awards and performance satisfaction.
- 2.3. **Teaching and learning process:** Each unit in a higher education institution should plan and prepare for teaching. Innovation resources in teaching are also important to improve the teaching and learning process. Finally teaching and learning must be quality assessed. Mass communication resources in teaching and learning are also encouraged.
- 2.4. **Students:** Each institution should monitor the process of student admission to assure that student qualification is good enough to pursue study at the higher education level. The number of academic staff is also important to ensure that staff can monitor each student closely. After graduation, employment and further education are the major factors in evaluation of quality of graduates, so there should also be a graduate follow-up system.
- 2.5. **Assessment:** Assessment includes learning assessment, the student examination system, and analytical system for examinations.
- 2.6. **Supporting resources:** The resources that are needed in the higher education institution include library, building, laboratory, training rooms, educational audio-visual equipment, and other necessary educational equipment.

Aspect 3: Student recreation activities

- 3.1. Policy and objectives of student development:** Each institution should specify the policies and activities for student development, including health activities, moral principle activities, academic supporting activities, preservation of environment activities, preservation of art and culture activities, and assessment system of student development activities.
- 3.2. Advisor system:** This includes an appropriate advisory development system, and an assessment audit system.
- 3.3. Career guidance service:** Each institution should establish a job placement unit to provide a service to students regarding employment after graduation.

Aspect 4: Research

- 4.1. Policy, planning, and supporting research system:** The higher education institution should develop documentation of policy and research resources system.
- 4.2. Research resources:** These include financial support from government or private sector.
- 4.3. Research outputs:** They can be in the form of number of published research papers in international or national journals, or in international conferences. Research outputs can also be in the form of number of citation of the research publication, including patents.

Aspect 5: Social academic service

- 5.1. Objectives and planning:** Each institution should determine objectives and plans for academic service.

- 5.2. Procedure:** Procedures of social academic service include the number of services, type of service, sustainability of service, satisfaction from users, and assessment on academic service.

Aspect 6: Preservation of arts and culture

- 6.1. Objective and planning:** Each institution should set up objectives and plans for the preservation of arts and culture.
- 6.2. Procedure:** Procedures of service for preservation of arts and culture include the number of services, satisfaction from users, and assessment on preservation of arts and culture service.

Aspect 7: Administration

- 7.1. Structure and administration:** Organisation structure should facilitate administration in the institution to achieve its mission and objectives.
- 7.2. Personnel authorisation:** Each institution should identify authorisation details on job description, job manual, and job specification
- 7.3. Personnel selection system:** Each institution should develop personnel selection system in order to assure appropriate quality of personnel and also provide assessment on each personnel fairly and transparently.
- 7.4. Information system for policy-maker:** The policy-maker can be supported by the information technology in the process of planning, implementing strategy, and in decision making.
- 7.5. Participation in management:** Each institution should establish a participation system for planning and decision making.

Aspect 8: Budgeting

8.1. Budget sources: Each institution should find funding supports in addition to government funding.

8.2. Allocation and auditing: A budget allocation system should be established, and educational expenditure should be analysed and assessed.

Aspect 9: Quality assurance and enhancement

9.1. Internal quality assurance: This system should include the establishment of policy, mission, rule, and a regulation manual for staff, quality assurance mechanisms, procedures, reports, and internal quality controls.

9.2. External quality assurance: Contents are similar to those of internal quality assurance, but it is assessed by external parties.

5.3.3 External quality assurance for higher education in Thailand

The government has established the Office for National Education Standards and Quality Assessment (ONESQA) for delivery external quality assurance in higher education. The objectives of ONESQA are to develop criteria and methods of external assessment, and to use them to evaluate the quality of educational institutions. ONESQA has thus established the external assessment system, setting the framework, direction, and method for external assessment and developed standards and criteria for external assessments.

An external quality assurance audit conducted by ONESQA consists of three phases: pre-visit, visit, and post-visit. The process of these three phases is shown in Figure 5.3.

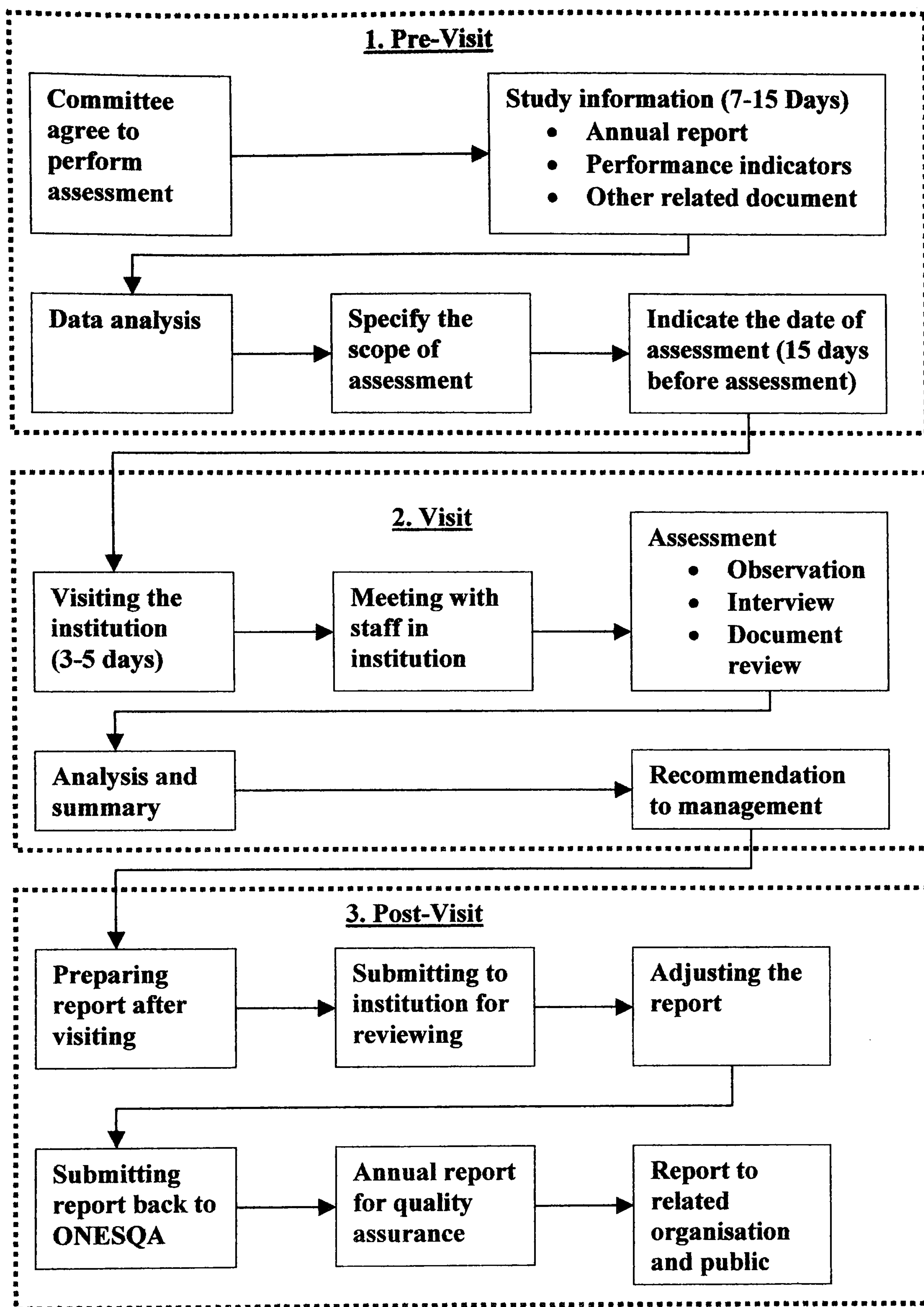


Figure 5.3 The procedure of external quality assessment conducted by ONESQA

Source: Adapted from Office for National Education Standards and Quality Assessment (2002)

Once the committee has agreed to assess institution, the assessment team will review and study the background information of that institution, including annual report, performance indicators, and other related document for approximately 7 – 15 days. After this review, all data will be analysed and the scope of assessment will be specified, and the assessment date is announced no later than 15 days before assessment.

During the visit, a team of assessors meets up with institution staff and start collecting data by observation, interview, and document review. All of these data will be analysed and summarised in the form of recommendation to management. The visit period lasts approximately 3-5 days.

After the visit, an assessment report is prepared and a draft is submitted to the institution for review. Amendments can be made during this period and a second draft is then returned to ONESQA, who then produce the final annual report. This report is then submitted to other related organisations and disclosed to the public.

5.3.4 Performance indicators for higher education in Thailand

ONESQA has also established performance indicators for higher education. They are categorised in 8 standards with 28 indicators. These standards are mostly based on 9 aspects of higher education criteria developed by the Commission on Higher Education, as mentioned earlier. The standards and performance indicators are shown in Table 1.1 in Chapter One.

The indicators are used to monitor quality externally at least once every five years. The process of external quality assurance assists higher education institutions in identifying their level of quality in various aspects. It also encourages each institution to improve the standard of education. After applying both internal and external quality assurance, the institution will be better placed to compete both locally and internationally, as its resource will be better utilised. The institution itself will have enough information to improve its organisation, and stakeholders will be better informed to make important decisions systematically and correctly.

5.4 Culture of university in Thailand

Culture can be defined in many ways. One definition is ‘the collective programming of the mind which distinguishes the members of one human group from another’ (Hofstede, 1980:25). It can also be defined as ‘a climate, an atmosphere, a feeling for which attitudes are encouraged and which are discouraged (Anthony and Young, 2003: 395). In his study of national cultures, Hofstede (1980) conducted surveys in 40 countries and found four main dimensions on which country cultures differ. These dimensions are power distance, uncertainty avoidance, individualism, and masculinity. The definition of each dimension is presented in Table 5.10.

Dimension	Definition
Power distance	‘The difference between the extent to which a boss can determine the behaviour of a subordinate and the extent to which a subordinate can determine the behaviour of a boss’ (Hofstede, 1980:99).
Uncertainty avoidance	‘The tolerance for uncertainty (ambiguity) which can be found in individuals and which leads some individuals in the same situation to perceive a greater need for action for overcoming the uncertainty than others’ (Hofstede, 1980:161).
Individualism	‘The relationship between individual and the collectivity which prevails in a given society’ (Hofstede, 1980:213)..
Masculinity	‘The dominant sex role pattern in the vast majority of both traditional and modern societies’ (Hofstede, 1980:277).

Table 5.10 Hofstede’s four main dimensions on which country cultures differ

Based on Hofstede’s dimensions (Hofstede, 1980) Thai culture has high power distance, medium uncertainty avoidance, low individualism, and low masculinity. These results are confirmed by a study conducted by Adams and Vernon (2001), which indicated that Thais have significantly high agreement on the need for harmony in the group (low individualism), order in society (high power distance), and seeing uncertainty as a threat (high uncertainty avoidance).

Although, these four dimensions tend to differ from one country to another, in a university setting, a role of employee, especially an academic staff has more effect on its behaviour than a nationality difference (Hofstede, 1994). In his study of a

comparison of value systems between business managers with various nationalities and business school faculty also with various nationalities, Hofstede (1994) found that faculty differs significantly from managers, having more academic than management values. The results also showed that faculty evaluates students (business managers) subjectively most highly who have value profiles similar to theirs. This is regardless of the nationalities of faculty and business manager. These results indicate ‘an organisational socialisation’ or in this case a university socialisation.

According to Vakkuri and Meklin (2003), culture impacts on the use of performance measurement information in a university setting. Their study indicates that performance measurement systems in a university are seen as ‘structures of attention rather than formal systems of accountability’(Vakkuri and Meklin, 2003:751). Ambiguities exist in the objectives of performance measurement systems in the university context, and normal assumptions of a formal performance measurement system do not match assumptions of academic culture. As a result of these differences a university tends to practice game rationalities and politics of representation in order to decrease the significance of a performance measurement system. The comparison of these two assumptions can be summarised in Table 5.11.

Topic	Assumptions of the formal performance measurement system	Assumptions of academic culture
The problem of structure (who is accountable?)	<ul style="list-style-type: none"> • University • University departments 	<ul style="list-style-type: none"> • (Members of) ‘invisible colleges’ (research networks, networks between university and outside stakeholders, basic university functions)
The problem of knowledge production (what is one accountable for?)	<ul style="list-style-type: none"> • Measured output and outcomes • Activities with a fixed determinable production function 	<ul style="list-style-type: none"> • Premises for making appropriate choices • Performance measurement systems as a system of attention directing

Table 5.11 Ambiguities in the objectives of performance measurement system in the university context

Source: Vakkuri and Meklin (2003:755)

In the context of Thai culture, value can be divided into two perspectives: the horizontal perspective and the vertical perspective. Value in the horizontal perspective refers to the relationship in and between groups of people at same level. On the other hand, value in the vertical perspective refers to the relationship between the different levels in an organisation as a hierarchical structure.

Based on Holmes and Tangtongtavy (1996:46), there are five prominent Thai values, which can be categorised in the horizontal perspective. These values include, in Thai words, *Kreng Jai*, *Hai Kiad*, *Nam Jai*, *Hen Jai*, and *Sam Ruam*.

Kreng Jai

According to Holmes and Tangtongtavy (1996:46), *Kreng Jai* refers to

‘An attitude whereby an individual tries to restrain his or her own interest or desire, in situations where there is the potential for discomfort or conflict, and where there is a need to maintain a pleasant and cooperative relationship’.

Kreng Jai is often observed when there is an attempt to act under these following situations.

- Complying with others’ wishes or requests
- Reluctance to disturb or interrupt others
- Restraint of one’s show of displeasure or anger so as not to cause discomfort to others
- Avoidance of asserting one’s opinions or needs
- Reluctance to give instructions or pass orders to a superior, or to peers with more age or experience
- Reluctance to evaluate a colleague’s or superior’s performance
- Avoiding the demand for one’s rights
- Reluctance to ask questions when one has not understood someone

Hai Kiad

Hai Kiad refers to ‘to give respect or show honour’ (Holmes and Tangtongtavy, 1996:50). Although this seems to be similar to the western culture, the expression of this respect is different in style. Most Thai people give respect or show honour to their seniors. They also get feeling of honour when their superior asks for advice or introduce them to people in higher level. *Hai Kiad* can also occur when the superior points out a good piece of work or praise an idea in front of others. In this sense *Hai Kiad* is treated as some kind of a motivator.

Nam Jai

Nam Jai refers to ‘the genuine acts of kindness or a voluntary extension of help, to someone you know or even stranger, without the expectation of anything in return’ (Holmes and Tangtongtavy, 1996:52). *Num Jai* is a value that requires a person to take the initiative in showing consideration for others.

Hen Jai

Hen Jai refers to ‘the willingness to listen and perhaps to be flexible on a policy, by dealing with employees and problems on a case-by-case basis’ (Holmes and Tangtongtavy, 1996:53). This treatment can also be seen as a powerful motivator. It is similar to empathy but sometimes goes one step further as it also includes not only feeling but also action.

Sam Ruam

Sam Ruam refers to the attempt ‘to exercise restraint and maintain composure in stressful situations, avoiding extreme displays of emotion, whether one is angry, sad, - or even happy’ (Holmes and Tangtongtavy, 1996:56). Most Thais are taught that one should not express extreme feelings and are very sensitive to emotion, especially anger.

For the vertical perspective, there are two values, which are *Phradet* and *Phrakhun*.

Phradet

Phradet refers to ‘the traditional exercise of authority and toughness’ (Holmes and Tangtongtavy, 1996:62). The examples of *Phradet* include delegating tasks and authority, demanding loyalty, dispensing justice, administration of discipline or punishment, playing a mediating role, exercising firmness, making policies, and introducing improvement.

Phrakhun

Phrakhun refers to ‘the traditional system of patronization’ (Holmes and Tangtongtavy, 1996:62). The examples of activities that are considered as *Phrakhun* are giving money, shelter, food, clothing, giving care during sickness or other crisis, giving protection vis-à-vis outsiders, lending prestige, sponsorship in education, marriage, ordination etc., and giving rewards.

These values are often found in a university setting in Thailand. *Kreng Jai*, *Hai Kiad*, *Nam Jai*, *Hen Jai*, and *Sam Ruam* are normally seen between staff in a Thai university, while *Phradet* and *Phrakhun* are found between superior (Rector, Dean, Head of Department) and subordinate (staff). Relating to Hofstede’s model, *Phradet* and *Phrakhun* can be related to high power distance and the rest of Thai values show the sign of low individualism.

As the fact that the main content in this thesis is not about Thai culture, the description of Thai culture obviously cannot be fully expressed in this thesis. Only useful aspect of Thai culture that is related to working practices in a university is therefore provided. This information is later used when data is analysed and when model is created in Chapter Seven and Eight respectively.

5.5 Change management in universities in Thailand

As mentioned earlier, the final topic in this chapter aims to provide the methodology of managing change especially in the context of implementing a new performance measurement framework into a university.

As a result of a rapid change in the environment in which universities operate, (i.e. the increase in competition for enrolment, an opening in new international markets, and the growth in number of differentiated programmes targeted at corporate customers), a university must also change in order to survive. It is worth considering the overlapping theory of the 1980s on organisational culture, of the 1990s on managing change, and of the 2000s on the learning organisation.

In late 1970s and the early 1980s, the concept of organisational culture was dominant. Handy (1976:183) classifies organisation in terms of power, role, task, and person. The power culture is normally found where the founding entrepreneur leads the organisation. Control is exercised on individual level rather than through regulations (Witzel, 1998b:275). The role culture by contrast, 'is hierarchical and bureaucratised' (Witzel, 1998b:275). The organisation is normally divided by its functions. In the task culture, 'the primary orientation is on the job or project' (Witzel, 1998b:275). It is an adaptive culture. Nevertheless its weakness is that there is no centre to the network. Thus it is difficult to find the person who takes responsibility (Witzel, 1998b:276). Finally the person culture exists 'only to serve and assist the individuals within it' (Handy, 1976:189).

Universities also possess a hybrid of these cultures. In Thailand, the roles of Rector, Associate Rector, Dean and Head of Department are the evidences of a power-based culture, which is embedded into the organisation structure. The centralised functional departments, such as academic and administrative departments, are evidence of a role-based culture within a university. Task-based culture is evident in project work, and finally a person-based culture is represented by 'collegiate' atmosphere within a university.

In the late 1980s and the early 1990s, attention moved toward the change management in organisation. There are two approaches of managing change: system intervention and organisational development (Paton and McCalman, 2000). Change in the system intervention approach is analysed and planned at high management levels and are suitable for the 'hard or mechanistic' problems. Therefore it can be related to a power-based and a role-based culture. Change in the organisation development approach is on the other hand driven from the bottom, and are more suitable for 'soft or complex' problems, hence it can be related to a task-based and a personal-based culture.

Consideration of the learning organisation comes to prominence in the early 2000s. According to Senge (1990:3), learning organisations are defined as

‘Organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together’.

It is now widely recognised that 'learning and growth' is important for every organisation. The Balanced Scorecard initially developed by Kaplan and Norton (1992) also includes learning and growth as one of its four perspectives. It is a foundation for improvement in the internal business process, customer satisfaction, and financial performance. Nevertheless, studies in learning organisation in a university setting are rare, which indicates that attention is not being given to developing learning organisation universities.

As mentioned earlier, there are two main approaches to managing change: the intervention strategy model and organisation development model. These two models contrast significantly and each model is suitable for specific type of the nature of change. The nature of change can be categorised into two extreme ends. One is the pure technical nature of change that is related to hard/mechanistic problems. The other is people oriented nature of change that is more related to soft/complex problems. Paton and McCalman (2000:23) define the hard and soft problem attributes as shown in Table 5.12.

Hard/mechanistic problems	Soft/complex problems
<ul style="list-style-type: none"> • Objective, constraints and performance indicators are predominantly quantifiable 	<ul style="list-style-type: none"> • At best subjective, interrelated and semi-quantifiable objectives etc. will be available
<ul style="list-style-type: none"> • A tendency towards static environment forces 	<ul style="list-style-type: none"> • A volatile and complex environment will prevail
<ul style="list-style-type: none"> • Time scales known with reasonable certainty 	<ul style="list-style-type: none"> • Fuzzy time scales will predominate
<ul style="list-style-type: none"> • The environment of the change will be well bounded with minimal external interactions 	<ul style="list-style-type: none"> • The environment of the change will be unbounded and characterised by many internal and external interactions
<ul style="list-style-type: none"> • The problem or change will be capable for clear and concise definition 	<ul style="list-style-type: none"> • It will be difficult to define problem characteristics
<ul style="list-style-type: none"> • It may be defined in systems/technological terms 	<ul style="list-style-type: none"> • It will be defined in interpersonal and social terms
<ul style="list-style-type: none"> • Resources required to achieve a solution will be reasonable well known 	<ul style="list-style-type: none"> • Resource requirements will be uncertain
<ul style="list-style-type: none"> • Potential solutions will be limited and knowledge of them obtainable 	<ul style="list-style-type: none"> • There will be a wide range of solutions, all of which may appear relevant and interconnected
<ul style="list-style-type: none"> • Structured approaches will produce results 	<ul style="list-style-type: none"> • No clear solution methodology will be visible
<ul style="list-style-type: none"> • Consensus on the best way forward will be easily reached 	<ul style="list-style-type: none"> • Consensus on the way forward and a shared perception of the problem will not exist

Table 5.12 ‘Hard’ and ‘soft’ problem attributes

Source: Paton and McCalman (2000:23)

Paton and McCalman (2000:21) also propose that the intervention strategy model is appropriate for hard/mechanistic problems while the organisation development model is more appropriate for soft/complex issues. As a result, before the appropriate model can be chosen, the nature of the problem must be determined. The TROPICS test is proposed as a tool to access the nature of the problem (Paton and McCalman, 2000:23). It consists of factors that should be considered, which are time scales, resources, objectives, perceptions, interest, control, and source. The uses of the TROPICS test to identify the nature of change are presented in Table 5.13.

TROPICS factor	Tendency toward a system-based, mechanistic solution methodology (hard issue)	Tendency toward an organisational development, complex solution methodology (soft issue)
Time scales	<ul style="list-style-type: none">• Clearly defined, short to medium term	<ul style="list-style-type: none">• Ill defined, medium to long term
Resources	<ul style="list-style-type: none">• Clearly defined and reasonably fixed	<ul style="list-style-type: none">• Unclear and variable
Objectives	<ul style="list-style-type: none">• Objective and quantifiable	<ul style="list-style-type: none">• Subjective and visionary
Perceptions	<ul style="list-style-type: none">• Shared by those affected	<ul style="list-style-type: none">• Creates conflict of interest
Interest	<ul style="list-style-type: none">• Limited and well defined	<ul style="list-style-type: none">• Widespread and ill defined
Control	<ul style="list-style-type: none">• Within the managing group	<ul style="list-style-type: none">• Shared outwith the group
Source	<ul style="list-style-type: none">• Originated internally	<ul style="list-style-type: none">• Originated externally

Table 5.13 The TROPICS test

Source: Paton and McCalman (2000:24)

Additional information needed to manage change is knowledge of driving and restraining forces for the specific change. This can be done by applying a force field analysis (Lewin, 1951), a diagrammatic representation of which is illustrated in Figure 5.4.

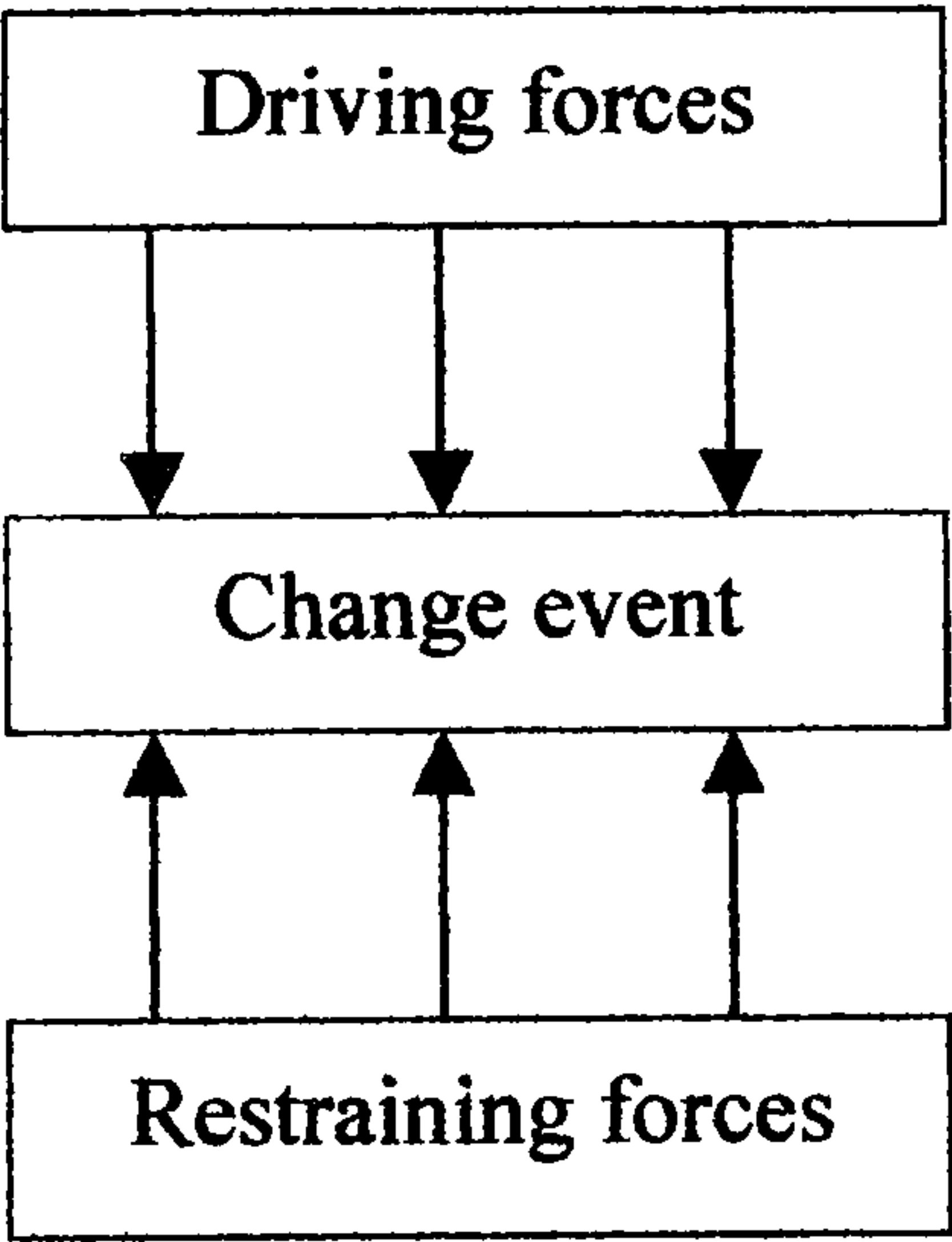


Figure 5.4 A force field diagram

Source: Lewin (1951)

This force field diagram assists the problem owner, or change agent, in organisation to understand the relative magnitude of driving and restraining forces. It is fundamental if change is to be implemented successfully that a shared perception among individuals or groups affected by change is obtained. To implement the change successfully, the driving forces should outweigh the restraining forces. This

usually happens when those affected by change see common objectives and mutual benefits.

In case of Thai university, the possible driving forces for change, when introducing a performance management system, could include

- Government's policy of the autonomous university
- New established government's rules and regulations regarding to the performance measurement of a university
- Increasing competition among universities
- Low awareness of mission and strategy within a university
- Limited translation of strategy into action
- Existing performance measurement system is not good enough

On the other hand, the possible restraining forces for change in the performance measurement system in a Thai university include

- Increase in workload
- Data insufficiency
- Too tight control – no room for personal judgment
- A perception that existing performance measurement system is good enough
- Not enough resource to implement the new performance measurement system
- No support from senior management

These possible driving and restraining forces are tested against the perception of staff in universities, and results are presented in the Chapter Nine, where the implementation plan of a new model is proposed.

When it is clear whether it is hard, mechanistic problems or soft complex problems, and when both driving and restraining forces are recognised, the change management approach can be chosen. As mentioned earlier, there are two main models for

managing change: the intervention strategy model and the organisation development model.

The intervention strategy model

Three interdependent phases of intervention, definition, evaluation, and implementation are proposed by Paton and McCalman (2000:82). In the definition phase the problem and system are specified, the success criteria are formulated, and performance indicators are identified in order to be able to evaluate the options subsequently generated. In the evaluation phase options and solutions are generated, and evaluation techniques are selected in order to evaluate the proposed options. For the final implementation phase the implementation strategies are developed, and then the change is introduced to the organisation. These three phases of the intervention strategy model is presented in Figure 5.5.

The organisation development model

According to Paton and McCalman (2000:165), organisation development (OD) is

‘An ongoing process of change aimed at resolving issues through the effective diagnosis and management of the organisation’s culture. This development process uses behavioural and social science techniques and methodologies through a consultant facilitator and employs action research as one of the main mechanism for instigating change in organisational groups’.

In OD process the members of an organisation can influence change. It is a long-term, strategic mechanism for initiating change that places emphasis on the process of attaining change. Unlike the intervention strategy model, there is no route map. In this model, changes can be accomplished by using a number of different approaches. The OD is related to motivation of the individual, job and work design, interpersonal relations, and participative management (Paton and McCalman, 2000).

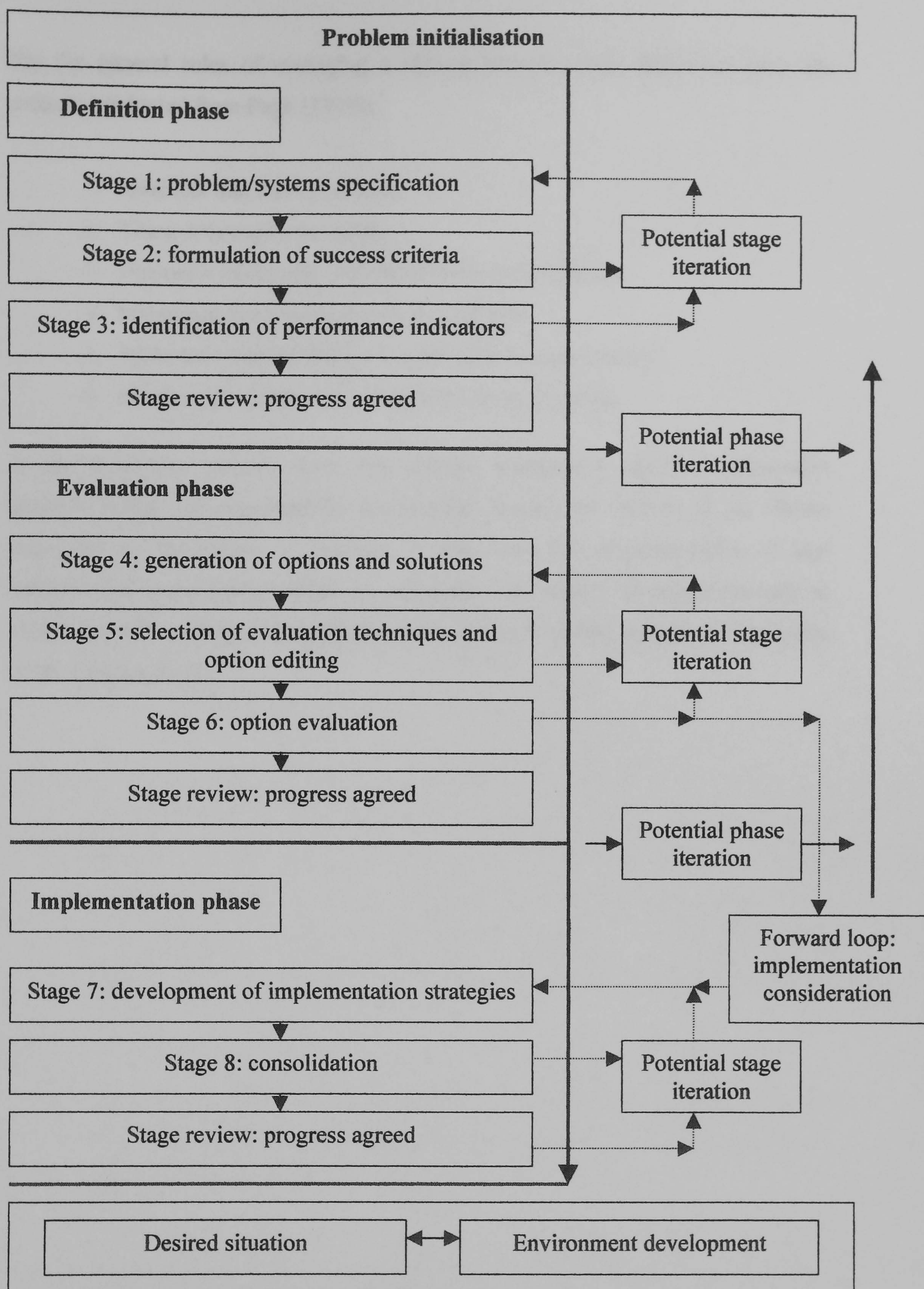


Figure 5.5 The intervention strategy model

Source: Paton and McCalman (2000:85)

For the general rules of managing a change process, these following rules are proposed (adapted from Pugh (1978)).

1. Establish that there is a need
2. Think it through thoroughly
3. Discuss it informally with those likely to be affected
4. Encourage the expression of all objections
5. Make sure you are willing to undertake change yourself
6. Monitor the change and reinforce them at all points.

In the university context, these two change management models; intervention strategy model and organisation development model, are options to be chosen according to the nature of problem, in this case, the implementation of new performance measurement system in a university. As a result, the option can only be chosen after the problem is analysed and more details of this analysis are presented in the Chapter Nine.

CHAPTER SIX: SCOPE AND METHODOLOGY

After reviewing the concept of performance measurement, EVA®, the Balanced Scorecard, and the university system in Thailand in previous chapters, this chapter turns to describe the scope of work and research methodology used in this study. The topics covered in this chapter include

1. *Various perspectives in management research.* Before describing the research methodology, literature on various perspectives in management research approaches are reviewed. This includes the nature of management research, types of management research, philosophy of research design, and research approaches.
2. *Scope of work.* After reviewing management research approaches, the focus turns to the scope of work. This section includes objectives of the study and research questions.
3. *Theoretical and analytical management frameworks and the research process.* The theoretical framework used in this study is described in this section. Contingency theory, which is used as a basis in this thesis, is then described. The analytical framework of the thesis is also presented, including the model of the case study research and the survey research. Finally the research process is illustrated to explain how the research is performed in this thesis.
4. *Research method.* This section describes in detail the methods used in this study, the case study research and the survey research. It also explains the rationale of the selection of the methods.
5. *Data collection method.* This section describes the methods used to collect data, interviews and questionnaire, in the case study research and in the survey research.

6.1 Various perspectives in management research

6.1.1 Nature of management research

The scope of management research is limited by one's views of 'management'. As previously described in Section 2.1 in Chapter Two, Easterby-Smith et al. (2002:7) suggest five views of management: classical, decision theory, work activity, competencies, and critical. According to each view, the nature of management research can be in various forms. For example, if one regards management as work activity, management research is more related to observational method that can provide a description of managerial behaviour in a real organisation, than gathering stories or conversations about management related on the critical view of management.

Despite the wide study of management, the majority of books on management research methods stem from cognate disciplines such as sociology, education, and psychology. Management research methods are mostly based on methodology used in the social science. However Easterby-Smith et al. (2002:7) describe that management research is distinctive for three reasons.

1. The practice of management is largely transdisciplinary. The knowledge must be drawn from various distinct disciplines such as economics, statistics, mathematics, or sociology.
2. Management research is more difficult to conduct because managers tend to be powerful and busy people. Access to their organisation is only allowed when managers can see commercial or personal benefits to be derived from the research.
3. 'Management requires both thought and action'(Easterby-Smith et al. 2002:7). Managers not only feel that research should lead to practical consequence, but also are capable of taking action themselves in the light of results from the research.

Each of these three reasons is not unique to management research. For example, educational research is also multidisciplinary, and organisational sociological research is also difficult to conduct because of the access problem. However the combination of all three however makes management research distinctive.

Transfield and Starkey (1998:352) also agree that 'management research is transdisciplinary and, as such, cannot be reduced to any sum of parts framed in terms of contributions to associated disciplines'. It engages with both the world of theory and the world of practice. According to Transfield and Starkey (1998), in the cognition dimensions of disciplines, management research possesses 'soft' property, which means that knowledge and research methods are often drawn from associated disciplines. It concerns not only 'knowing what' but also 'knowing how'. Management research also focuses more on the application to practical problems, therefore possessing the 'applied' property. In the dimension of social organisation of disciplines, management research has 'divergent' property, which means that 'boundaries can be ambiguous and, consequently, difficult to defend in time of competition for resources with other disciplines' (Transfield and Starkey, 1998:347). Finally, a low people-to-problem ratio is one characteristic of management research. Therefore it possesses 'rural' property, which means that there are wide areas of study. Identical problems can be examined using multiple approaches. In conclusion, 'management research can be viewed as a soft, applied, divergent and rural field of study' (Transfield and Starkey, 1998:347).

6.1.2 Types of management research

Based on the outcome of the research, management research is similar to any other type of research in that can be classified into three types: pure research, applied research, and action research.

1. Pure research

The objective of pure research is to develop and evaluate concepts and theories, which may or may not have practical implications. It attempts to expand the limit of knowledge (Zikmund, 2003:7). There are at least three forms of theoretical development: discovery, invention, and reflection (Easterby-Smith et al. 2002:9). It is called discovery when ‘a totally new idea or explanation emerges from empirical research’ (Easterby-Smith et al. 2002:9). Invention is emerged when ‘a new technique, method, or idea is created to deal with a particular kind of problem’(Easterby-Smith et al. 2002:9). The third type of pure research, reflection, is where ‘an existing theory, technique or group of idea is re-examined’ (Easterby-Smith et al. 2002:9) in different context. One of the key features of pure research is that the results from the research are disseminated through any kind of publication such as books, articles, conference papers or theses and addressed mainly at academic audience.

2. Applied research

The objective of applied research is to search for the solution of specific problems or to make decisions about a particular course of action. In this type of research, the application of theory plays important role. ‘One common form of research is the evaluation of the process and results of a particular course of action’ (Easterby-Smith et al., 2002:10).

3. Action research

There is much research that cannot be classified neatly into the two previous types. The distinctiveness of this type of research is that researcher ‘no longer tries to maintain a distance and separation from the thing that is being researched’(Easterby-Smith et al. 2002:10). The objective of research is to have a direct impact and ‘change should be incorporated into the research process itself’ (Easterby-Smith et al. 2002:10). This type of research can be often found in organisational development when researcher works with a group of organisational stakeholders in order to improve the organisation.

6.1.3 Philosophy of research design

According to Easterby-Smith et al. (2002:28), there are two contrasting views of how social science research should be conducted: positivism and social constructionism. In positivism, the key idea is that ‘the social world exists externally and that its properties are measured through objective methods’ (Easterby-Smith et al. 2002:28). The observer ‘must be independent’ from what is being observed. Human interest ‘should be irrelevant’, which means that ‘the choice of what to study and how to study it, can be determined by objective criteria rather than human beliefs and interests’ (Easterby-Smith et al. 2002:28). Explanations ‘must demonstrate causality’ that explain regularities in human behaviour. Research progresses through ‘hypotheses and deductions’. Concepts need to be ‘operationalized so that they can be measured’ quantitatively. Units of analysis should be ‘reduced to the simplest terms’ so that problems as a whole are better understood. In positivism, statistical probability is required to generalise about regularities in human and such regularities are identified ‘by making comparisons of variations across samples’ (Easterby-Smith et al. 2002:29).

On the other hand, in constructionism, according to Easterby-Smith et al. (2002:30), the key idea is that the social world is ‘determined by people rather than by objective and external factors’. The observer becomes ‘part of what is being observed’. Human interests ‘are the main drivers of science’. Explanations ‘aim to increase general understandings of the situation’ rather than to demonstrate causality. Research progresses through ‘gathering rich data from which ideas are induced’. Concepts ‘should incorporate stakeholder perspectives’. Unlike that in positivism, units of analysis ‘may include complexity of whole situations’. Generalisation is made through ‘theoretical abstraction’. Finally small numbers of cases are ‘chosen for specific reasons’. The contrasting implications of these two philosophical traditions are presented in Table 6.1.

Easterby-Smith et al. (2002:54) also map some typical research designs into a matrix of research designs as shown in Figure 6.1. The horizontal axis represents two contrasting philosophies: positivism and social constructionism, while the vertical axis represents the role of researcher, which can vary from independence from to involvement to the subjects of research.

	Positivism	Social Constructionism
The observer	Must be independent	Is part of what is being observed
Human interests	Should be irrelevant	Are the main drivers of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progresses through	Hypotheses and deductions	Gathering rich data from which ideas are induced
Concepts	Need to be operationalised so that they can be measured	Should incorporate stakeholder perspectives
Units of analysis	Should be reduced to the simplest terms	May include the complexity of whole situations
Generalisation through	Statistical probability	Theoretical abstraction
Sampling requires	Large numbers selected randomly	Small numbers of cases chosen for specific reasons

Table 6.1 Contrasting implications of positivism and social constructionism
Source: Easterby-Smith et al. (2002:30)

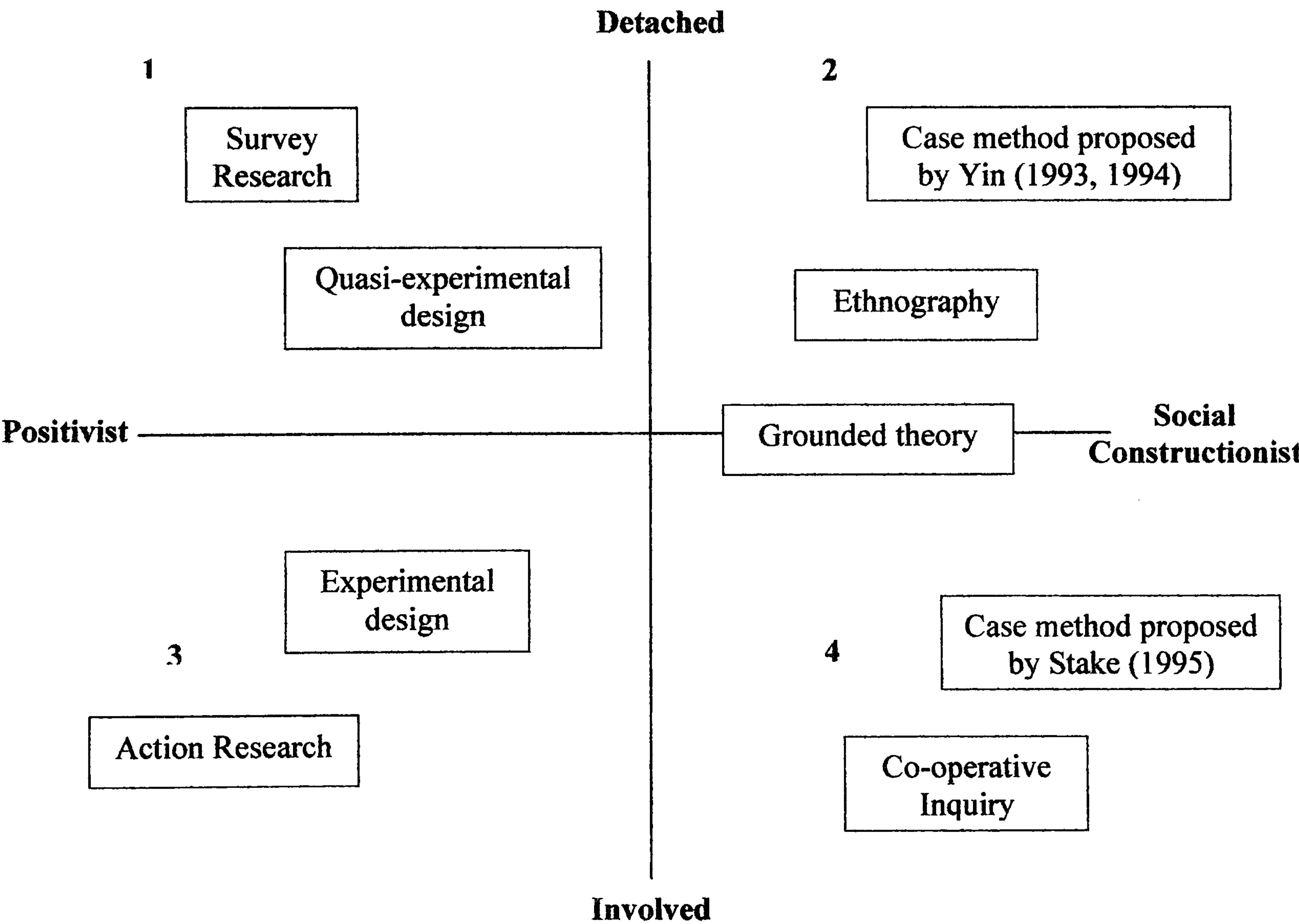


Figure 6.1 Matrix of research designs
Source: Easterby-Smith et al. (2002:57)

The research designs that are included into positivism philosophy include survey research, quasi-experimental design, experimental design, and action research. Those included into the social constructionism philosophy are case method, ethnography, grounded theory, and co-operative inquiry. In the aspect of the role of researcher, researchers are more involved in experimental design, action research, grounded theory, co-operative inquiry, and case method proposed by Stake (1995), while researchers are more detached in survey research, quasi-experimental design, ethnography, and case method proposed by Yin (1993, 1994).

In the first quadrant, the survey is a research technique in which information is gathered from a sample of people by use of questionnaire or interview. It is 'a method of data collection based on communication with a representative sample of individual' (Zikmund, 2003:175). Quasi-experimental design, on the other hand, is 'an experimental design that fails to control adequately for loss of external or internal validity' (Zikmund, 2003:275). It 'makes use of multiple measures over time in order to reduce the effects of control and experimental group not fully matched. One of the most common methods in this design is the pre-test/post-test comparison design' (Easterby-Smith et al. 2002:48). Both survey research and quasi-experimental designs are examples of research design that are in positivism philosophy, and researchers are more detached from the subjects being studied.

In the second quadrant, the researcher is still detached from subjects being researched, but is adopting a social constructionism philosophy. Research designs in this quadrant include case study method as proposed by Yin (1993, 1994) and ethnography. Case study method is 'an exploratory research technique that intensively investigates one or a few situations similar to the researcher's problem situation' (Zikmund, 2003:115). Ethnography refers to 'highly descriptive writing about particular groups of people' (Silverman, 2001:305). It seeks to 'understand the meanings and significances that people put upon the behaviour of themselves and others' (Easterby-Smith et al. 2002:49).

Experimental design and action research are included in the third quadrant. Experimental design is 'a research method in which conditions are controlled so that one or more variables can be manipulated in order to test a hypothesis' (Zikmund,

2003:737). Action research, on the other hand, aims to have direct impact and change is incorporated into the research process. A common feature of this design is that the researcher no longer tries to maintain a distance from subject being studied. Nevertheless these two research designs are both considered to be in positivism philosophy.

The fourth quadrant includes grounded theory, co-operative inquiry, and case study method proposed by Stake (1995). Grounded theory, in which the researcher attempts to derive a theory, was established by Glaser and Strauss (1967). It involves three stages: 'An initial attempt to develop categories which illuminate the data ... to saturate these categories with many appropriate cases ... developing these categories into more general analytic frameworks with relevance outside the setting' (Silverman, 2001:71). Co-operative inquiry was developed to research action more at an individual level. The case study method, proposed by Stake (1995), differs than that proposed by Yin (1993, 1994) in the sense that researchers are more involved in subject being researched. In conclusion, for all these three research designs, they are based on social constructionism and researchers are more involved to subjects being researched.

6.1.4 Research approaches

There are two distinct research approaches: the quantitative study and the qualitative study. According to Creswell (1994:2), a quantitative study is

'An inquiry into a social or human problem, based on testing a theory composed of variables, measured with numbers, and analyzed with statistical procedures, in order to determine whether the predictive generalizations of the theory hold true'.

On the other hand, Creswell (1994:1) also defines a qualitative method as

‘An inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting’.

These two paradigms for study are based on different assumptions. According to Creswell (1994:5), in the quantitative approach, ‘reality is objective, singular, apart from the researcher’. In the qualitative approach, on the other hand, ‘reality is subjective and multiple as seen by participants in a study’. The relationship of the researcher to subjects being studied is also different in the two paradigms. The researcher is ‘independent from that being researched’ in quantitative approach. In qualitative approach, ‘the researcher interacts with that being researched’. The quantitative approach is ‘value-free and unbiased’ while the qualitative approach is ‘value-laden and biased’. The research language is also different, it is ‘formal, based on set definitions, impersonal voice’ in quantitative approach, while all these characteristics are opposite in qualitative approach. The attributes of quantitative research include ‘deductive process, cause and effect, static design - categories isolated before study, context free, generalization leading to prediction, explanation, and understanding’. On the other hand, the attributes of qualitative research include ‘inductive process, mutual simultaneous shaping of factors, emerging design - categories identified during research process, context-bound, patterns, theories developed for understanding’.

Easterby-Smith et al. (2002:130) distinguish four main ways of gathering quantitative data, which include interview, questionnaires, tests or measures, and observation. Some of these methods are also used in qualitative study. Riley et al. (2000:39) present methods of data collection that include two main sources of data, primary data and secondary data. Primary data collection includes questionnaire, interview, focus group, and observation. Secondary data collection involves biographical analysis, public records, content analysis, conversation analysis, interaction analysis, and video analysis. Riley et al. (2000:39) also argue that ‘there are always trade-offs and compromises’ in relation to respondent group size and researcher’s level of involvement. Figure 6.2 shows the methods of data collection and research method continuum.

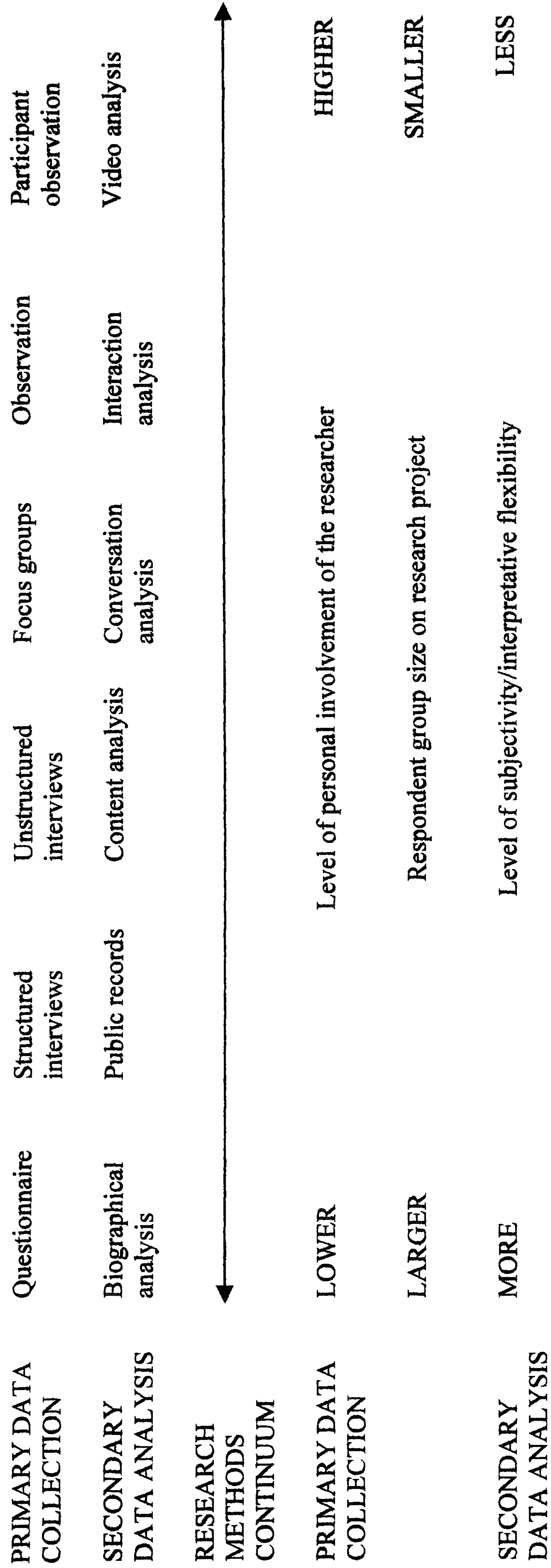


Figure 6.2 Methods of data collection relative to respondent group size and researcher’s level of involvement

Source: Riley et al. (2000:39)

From the figure, it becomes obvious that the questionnaire method has a low level of personal involvement of the researcher, while participant observation has high involvement. However questionnaire is more appropriate to larger respondent group size than the other methods.

Silverman (2001:11) also presents four major methods frequently used in either quantitative or qualitative studies; observation, analysing texts and documents, interviews, and recording and transcribing. The different uses for these four methods are presented in Table 6.2.

Method	Methodology	
	Quantitative research	Qualitative research
Observations	Preliminary work, e.g. prior to framing questionnaire	Fundamental to understanding another culture
Interviews	Survey research: mainly fixed-choice questions to random samples	Open-ended questions to small samples
Analysing documents	Content analysis, i.e. counting in terms of researchers' categories	Understanding participants' categories
Audiovisual materials	Used infrequently to check the accuracy of interview records	Used to understand how participants organise their talk and body movements

Table 6.2 Different uses for four data collection methods

Source: Silverman (2001:12)

There are further options in each type of method. For example, in interview, there are at least three options: face-to-face, telephone, and group interview. Each method also has its own advantages and limitations. Options, advantages, and limitations of each method are presented in Table 6.3. Advantages and limitations of each option will affect the decision to select the data collection method in this study. However before explaining why a particular method is selected for the study, the scope of work in this study is explained in detail in the next section.

Method	Options within types	Advantages	Limitations
Observations	<ul style="list-style-type: none"> • Complete participant – researcher conceals role • Observer as participant – role of researcher is known • Participant as observer – observation role secondary to participant role • Complete observer – researcher observes without participating 	<ul style="list-style-type: none"> • Researcher has firsthand experience with informant • Researcher can record information as it occurs • Unusual aspects can be noticed during observation • Useful in exploring topics that may be uncomfortable for informants to discuss 	<ul style="list-style-type: none"> • Researcher may be seen as intrusive • Private information may be observed that researcher cannot report • Researcher may not have good attending and observation skills • Certain informant (e.g., children) may present special problems in gaining rapport
Interviews	<ul style="list-style-type: none"> • Face-to-face – one on one, in-person interview • Telephone – researcher interviews by phone • Group – researcher interviews informant in a group 	<ul style="list-style-type: none"> • Useful when informants cannot be directly observed • Informant can provide historical information • Allows researcher control over the line of questioning 	<ul style="list-style-type: none"> • Provides indirect information filtered through the views of interviewees • Provides information in a designated place rather than the natural field setting • Researcher's presence may bias responses • Not all people are equally articulate and perceptive

Table 6.3 Options, advantages, and limitations of each data collection method

Source: Creswell (1994:150)

Method	Options within types	Advantages	Limitations
Analysing documents	<ul style="list-style-type: none"> • Public documents such as minutes of meetings, newspapers • Private documents such as journal or diary, letter 	<ul style="list-style-type: none"> • Enables a researcher to obtain the language and words of informants • Can be accessed at a time convenient to researcher – an unobtrusive source of information • Represents data that are thoughtful in that informants have given attention to compiling • As written evidence, it saves a researcher the time and expense of transcribing 	<ul style="list-style-type: none"> • May be protected information unavailable to public or private access
Audiovisual materials	<ul style="list-style-type: none"> • Photographs • Videotapes • Art objects • Computer software • Film 	<ul style="list-style-type: none"> • May be an unobtrusive method of collecting data • Provides an opportunity for informant to share directly his or her reality • Creative in that it captures attention visually 	<ul style="list-style-type: none"> • May be difficult to interpret • May not be accessible publicly or privately • The presence of observer (e.g., photographer) may be disruptive and affects responses

Table 6.3 Options, advantages, and limitations of each data collection method (Continued)

Source: Creswell (1994:150)

6.2 Scope of work

This thesis focuses on the uses of EVA® and the Balanced Scorecard as being an appropriate and valuable performance measurement framework for public universities in Thailand. These two techniques have been widely used in commercial enterprises for many years. They also have been widely praised, as described in previous chapters. As mentioned earlier in the Chapter One, the Thai government's policy indicates that every public university should leave central government system. Each university must therefore adopt an appropriate performance measurement framework in order to be able to survive or better compete locally or even internationally. Therefore this thesis attempts to construct a model that incorporates these two techniques to be used as a performance measurement framework, and then investigate the value of the model in public universities in Thailand.

A single case study approach is selected to build the model. The reasons why the case study research is chosen as one of the research methods in this thesis and why a particular university is chosen as the case study are described later in this chapter. Once the case study university is selected, the structure and culture of the case study university is fully explored. The existing performance measurement system in the case study university is also analysed as it provides information on current practice and the areas that can be improved. The perception of the case study university's stakeholders on the use of EVA® and the Balanced Scorecard is then investigated. The reason why the structure and culture of the university and the perception of stakeholders on the existing performance measurement framework and the uses of EVA® and the Balanced Scorecard for the university affect the design of the new model is explained by the theoretical and analytical frameworks, which is described later in the next section.

Results from these investigations are then used as a basis to design the new model that combines the concept of EVA® and the Balanced Scorecard as the performance measurement model for public universities in Thailand. After the model is created, it is compared to what has been used in Chiang Mai University in Thailand and various foreign universities. For Chiang Mai University, the data collection methods are both interview with and questionnaire distribution to university management

staff. For foreign universities, the data is collected by using an online questionnaire, again aimed at university management staff. The perception of staff in Thai public universities, the related government agencies, and the selected foreign universities on the implementation of the new model is also investigated. The outcome is the implementation strategies for the new model for Thai public universities.

6.2.1 Objectives of the study

The main objective of this study is to construct the new performance measurement model for public universities in Thailand by combining the concept of EVA® and the Balanced Scorecard. As mentioned previously, the important attributes of the case study university that affect the design of the new model must be first explored. Consequently the objectives of the study are to investigate

1. The case-study university's structure and culture.
2. The perception of the case study university's stakeholders on the problems of the existing performance measurement system that is currently used within the case study university.
3. The perception of the case study university's stakeholders on the use of EVA® as the performance measurement model.
4. The perception of the case study university's stakeholders on the use of the Balanced Scorecard as the performance measurement model.

The results from these investigations then lead to the other two main objectives of the study, which are

5. The design of the new model that combines EVA® and the Balanced Scorecard to be used as the performance measurement model for public universities in Thailand.

6. The implementation strategies of the new model for the public universities in Thailand.

6.2.2 Research questions

Based on the objectives of study, research questions in this study are

1. What does the case study university's organisation structure and culture look like?
2. What are the problems of the existing performance measurement system pertaining to the case study university?
3. What is the perception of the case study university's stakeholders on the use of EVA® as the performance measurement model?
4. What is the perception of the case study university's stakeholders on the use of the Balanced Scorecard as the performance measurement model?
5. What does the new model, combining EVA® and the Balanced Scorecard into a performance measurement model for public universities in Thailand, look like?
6. How is the new model to be successfully implemented in public universities in Thailand?

Based on these research objectives and research questions, theoretical and analytical frameworks are established to be used as a basis to answer these questions. These are presented in the following section.

6.3 Theoretical and analytical management frameworks and the research process

6.3.1 Theoretical framework

During 1960s, there are attempts to classify the various schools of management theory. Koontz (1961) identifies six different theoretical schools of management theory, which include management process, empirical, human behaviour, social system, decision theory, and mathematical schools. However none of these theories can be applied to every organisation (Luthans, 1973). The mathematical approach is powerful in solving some management problems, while behavioural approach might be more appropriate in solving other problems but neither approach integrates all relevant knowledge of management (Longenecker and Pringle, 1978). As a result, an attempt to 'integrate a concept that will hold everything together' (Longenecker and Pringle, 1978:680) and to 'reorient management theories towards management practice' (Mockler, 1971:151) emerged in the early 1970s. This concept is generally called 'the contingency theory'. According to Luthans (1973), the emergence of a path called 'contingency' or sometimes 'situational' theory is the work of Mockler (1971) and Kast and Rosenzweig (1973). Since then contingency theory is applied on various topics such as organisational structure, managerial processes, and organisational conflict and change. Contingency approach states that there is no one best management technique or one best way to manage. It all depends on the set of variables under a particular situation.

In this research contingency theory is used as a foundation for the analytical framework. The performance measurement framework depends on the set of variables at a particular point in time. Sihler (1971) identifies four central and critical factors that should be considered in building a management control system. These factors are objectives of the organisation, organisational structure, ability to generate the required information, and timeliness of information. Otley (1999) also supports the use of contingency theory in management accounting, and identifies that a central contingent variable of the management accounting system is the strategy and objectives of the organisation. He also proposes five areas that can be used to evaluate a performance measurement framework; objectives, strategies and plans,

targets, rewards, and feedback. Chenhall (2003) also examines the contextual variables that have an effect on the design of management control system. These variables are external environment, technology, organisational structure, organisational size, organisational strategy, and culture.

This thesis is built on contingency theory, emphasising how contingent factors affect the design of a performance measurement system. In this study, contingent variables are examined in order to design a new performance measurement system for a university. However this research does not attempt to prove any causality of these variables and design of the system. It is, however, built upon existing literature by investigating contingent variables proposed by that literature, and builds the performance measurement system that fits an organisation, in this case a university.

The contingent variables chosen in this study include organisation structure and culture, which appears to be significant contingent variables for the design of a management control or performance measurement system (Sihler, 1971; Chenhall, 2003). The variables of organisation structure and culture in this study also include the objective of an organisation, which is another important contingent variable for the design of a management control or performance measurement system (Otley, 1999). The other contingent variable in this study is the perceptions of stakeholders on the performance measurement framework; on the problems of the existing performance measurement framework and the perceptions on the uses of new performance measurement frameworks: EVA® and the Balanced Scorecard. The perception of stakeholders on this issue is very important for the design of the new framework because if stakeholders, especially staff, do not see any problem with the existing framework or believe that the new techniques are not good for the organisation, the design of the new framework will face a significant amount of opposition and will finally fail when it is to be implemented. As a result, the perception of the stakeholders on the performance measurement framework is therefore another important contingent variable in this study. The more details of the analytical framework, which is based on the contingency theory is presented in the next section.

6.3.2 Analytical framework

The framework of analysis is designed as a basis to answer the research questions. This study, as previously described, is separated into two main phases: the case study research phase and the survey research phase. Figure 6.3 illustrates the model of the study, which is based on the contingency theory and established to answer all six research questions.

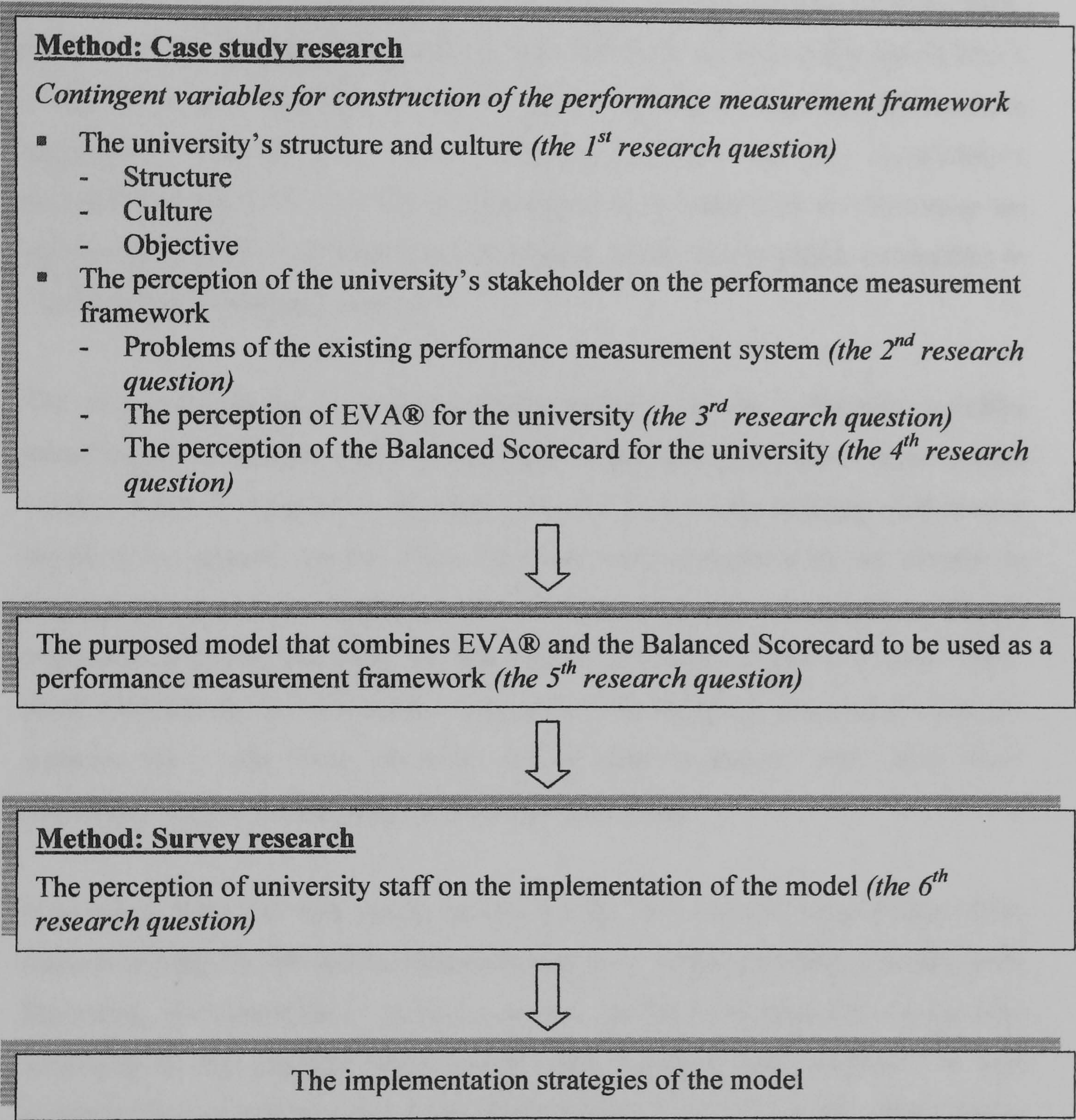


Figure 6.3 The model of the study

Model of the case study research

For the model of the case study research, the organisation structure and culture is firstly examined, as it affects the performance measurement system (this is in line with the 1st research question). The existing performance measurement system within Thammasat University, which is chosen as a case study, is then investigated (the 2nd research question). The outcome of the investigation indicates the areas that need improvement and existing problems associated with the system. Two new tools, EVA® and the Balanced Scorecard are then tested for the University stakeholder's perception on their value (the 3rd and 4th research questions). The data obtained from organisation structure and culture, existing problems and the stakeholder's perception on the uses of EVA® and the Balanced Scorecard for the University are used to create a new performance measurement model for the public universities in Thailand (the 5th research question).

The case study model is based on the hypothesis that the contingent variables described above have an effect on the design of the new performance measurement model, which is designed to eliminate the problems of the existing performance measurement system. At this stage, the case study however does not attempt to measure any causality or the extent to which the problems of existing system are eliminated after implementing the new model. The study attempts to show 'how' those problems can be eliminated or mitigated by applying the new model. That also explains why 'case study research', which aims to answer 'why' and 'how' questions, is chosen as the research method at this stage.

The output from the case study research is the new model, which incorporates features of both EVA® and the Balanced Scorecard. When considering the Balanced Scorecard, the stakeholder's opinions on new performance measures are grouped according to the strategic objectives of each measure. Each objective is then classified into each perspective of the Balanced Scorecard. The relationship between those objectives is then determined and a strategy map of university is constructed. The uses of EVA® are then incorporated into the strategy map as being the final outcome that represents the overall performance of a university. Nevertheless, the exact structure of the new model is dependent upon the result of the study and cannot

be expressed clearly at this stage. This is in line with the nature of qualitative study where model is the outcome not the input of study.

For the issues of validity and reliability of results from the case study, the between-method triangulation approach, the chain of evidence, and the feedback from informants are discussed in the next chapter as all of them lead to the construct validity of the study. The limited generalisability of findings from the case study or the external validity is also discussed. Finally the use of case study protocol and case study database are addressed as they lead to the reliability of the case study.

Model of the survey

In the survey research, after creation of a performance measurement model, opinions of the staff at Thammasat University on the model are investigated. It is then compared to models in other universities that apply the Balanced Scorecard concept. There is no evidence in literatures that EVA® has been applied to any university. So, there is no opportunity to study EVA® model in other university.

Finally, the perceptions of staff in Thammasat University, other public universities, the related government agencies, and the selected foreign universities on the implementation of the model are investigated (the 6th research question). The main objectives in this investigation are to answer the following questions.

1. Which approach, the top-down or bottom-up is more appropriate implementation strategy?
2. What are the driving forces for change (implementing the new model)?
3. What are the restraining forces for change (implementing the new model)?
4. What are the critical success factors for implementing the new model?

These questions are related to ‘what’ not ‘how’ and ‘why’, as a result, the survey strategy is chosen instead of other methods in this stage. The rationale of selection of research method is discussed in more details in section 6.4 after the research process is described.

6.3.3 Research process

The research process is presented in detail in Figure 6.4. In the first phase, the data is collected by two means: interview and questionnaires. Ten in-depth interviews are conducted and ninety-one questionnaires are distributed to gather data to be used to design EVA® and the Balanced Scorecard model. After data is analysed, the proposed model is created.

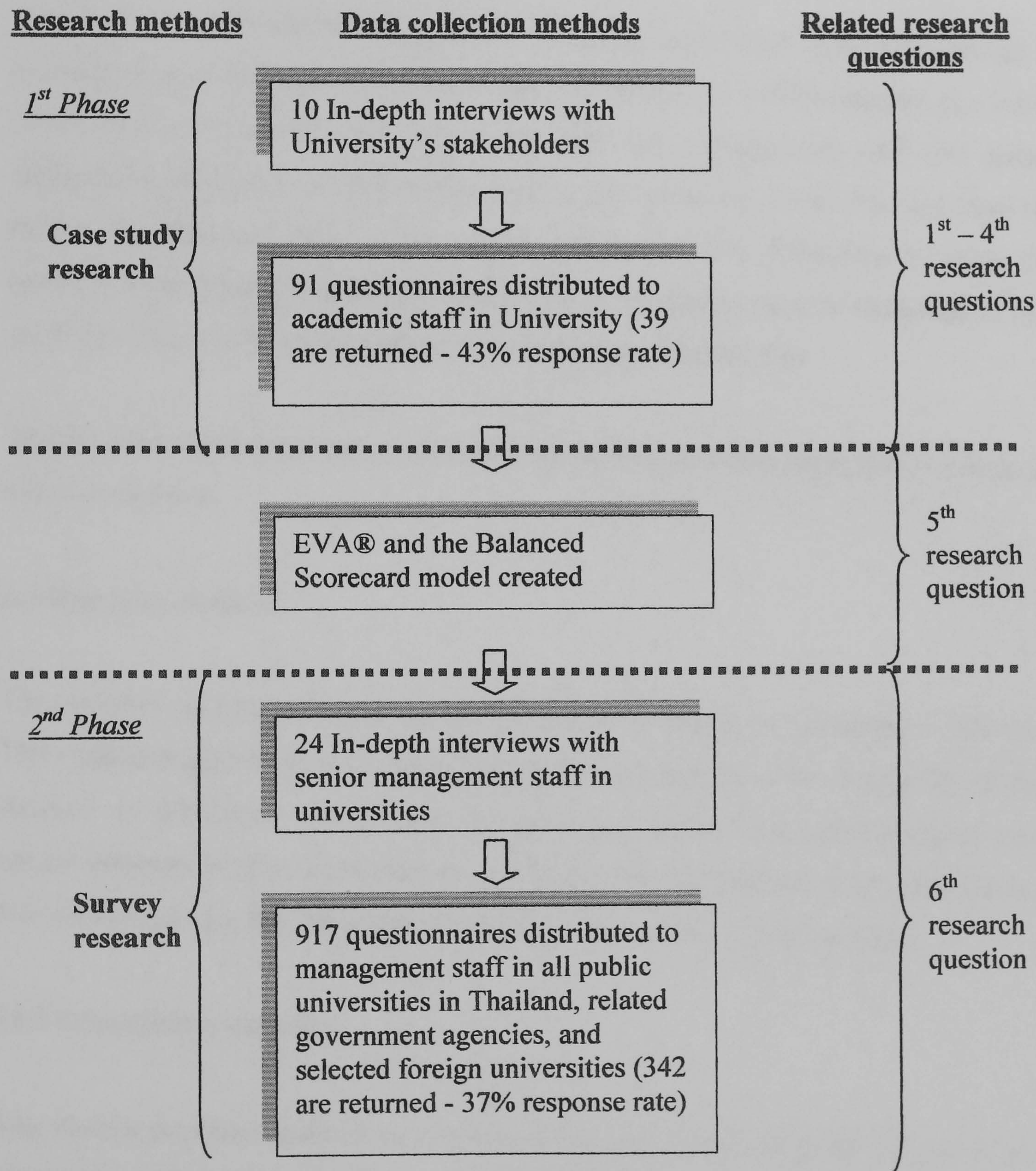


Figure 6.4 The research process

In the second phase, after the model is created, twenty-four in-depth interviews are conducted. 917 questionnaires are also distributed to management staff in all public universities in Thailand, related government agencies, and selected foreign universities. The main objective of survey research in the second phase is to identify the implementation issue of the proposed model, which includes the driving and restraining forces and critical success factors for model implementation.

The models' applicability will be tested by use of a pilot test within the Faculty of Commerce and Accountancy, Thammasat University. It will investigate the initial effect of the model on staff. Interviews with key management staff will gather information about how far the implementation has gone; the value obtained from the model; the predicted value of the model; and foreseeable difficulties of using the model in near future. Organisation and culture changes are also investigated in this pilot test. The results are concluded in final chapter, Chapter Ten.

The research method and data collection used in this thesis are explained in details in the next sections.

6.4 Research method

The research method refers to 'a specific research technique'(Silverman, 2001:3). The method selected for any research must be appropriate to the objectives of the research. In this thesis, two research methods are chosen: case study research and survey research. Before explaining the why these two methods are used in this thesis, it is worth exploring the characteristics of these two methods in more detail.

6.4.1 Case study research

Case studies are often selected as a method in organisational diagnosis as one of its advantages includes the fact that in case study research, 'an entire organization or entity can be investigated in depth and with meticulous attention to detail'(Zikmund, 2003:116), which 'enables the researchers to carefully study the order of events as they occur or to concentrate on identifying the relationships among functions,

individuals, or entities' (Zikmund, 2003:116). According to Yin (2003:13) case study is described as

'An empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident (...) The case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis'.

Case study is 'a research strategy, which focuses on understanding the dynamics present within single setting' (Eisenhardt, 1989:534). 'Case study research typically combines data collection such as archives, interviews, questionnaires, and observations'. The evidence can be either qualitative, quantitative or both of them (Eisenhardt, 1989:534). Case study is 'part of the research process ... a powerful evidence collection framework' (Remenyi et al., 2002:5).

A high quality case study research

'Should demonstrate all of these following characteristics:

- **A case study is a story**
- **A case study draws on multiple sources of evidence**
- **A case study's evidence needs to be based on triangulation of these sources of evidence**
- **A case study seeks to provide meaning in context.**
- **A case study shows both an in-depth understanding of the central issue(s) and a broad understanding of related issues and context.**
- **A case study has a clear-cut focus on either an organisation, a situation or a context.**

- A case study must be reasonably bound ...
- A case study should not require the researcher to become too immersed in the object of the research.
- A case study may draw on either quantitative or qualitative tools or both of either evidence collection and/or analysis, but it will not be exclusively quantitative.
- A case study needs to have a thoroughly articulate protocol' (Remenyi et al. 2002:4)

Case study research, with the above characteristics, can lead to the creation of knowledge or even building theory. The process of building theory from case study research proposed by Eisenhardt (1989) include eight steps, which are getting started, selecting cases, crafting instruments and protocols, entering the field, analysing data, shaping hypotheses, enfolding literature, and reaching closure.

6.4.2 Survey research

Survey produces 'quantitative or numeric descriptions of some aspects of the study population by asking people questions and information is collected from a sample rather than from every member of the population' (Fowler, 1988:9). It is 'a research technique in which information is gathered from a sample of people by use of a questionnaire or interview; a method of data collection based on communication with a representative sample of individual' (Zikmund, 2003:175). The main purpose of a survey is therefore 'to obtain information from, or about, a defined set of people, or population' (Easterby-Smith et al. 2002:135).

According to Creswell (1994:117), components of a survey method include the survey design, population and sample, instrumentation, variables in the study, and data analysis. Survey design should begin with 'the discussion by reviewing the purpose of a survey and the rationale for its selection as a design in the proposed study' (Creswell, 1994:118). This purpose is 'to generalize from a sample to a population so that inferences can be made about some characteristic, attitude, or behaviour of this population' (Creswell, 1994:118 cited Babbie, 1990). The

population and the sampling procedure must also be specified. This includes describing ‘the population in the study’, identifying ‘whether the sampling design for this population is single or multistage’, how individual is selected, and indicating the ‘number of people in the sample and how this number is determined’ (Creswell, 1994:119). The information about instrument to be used in data collection is also important in a survey method. This includes identifying ‘whether it is a self-designed instrument, a modified instrument, or instrument developed by someone else’(Creswell, 1994:120). The variables in the study are also essential in a survey method. It is useful especially for constructing the questionnaire or questions in the interview. Finally data analysis can be broken down into five steps: the identification of the number of returns of the survey, the discussion of the method by which response bias is determined, the report of a descriptive analysis of all variables in the study, the reliability and validity issues, and the identification of the statistics to be used to answer research questions of the study (Creswell, 1994:120).

6.4.3 The rationale of the selection of the methods

Different research strategy has its own advantages and limitations. However the methods selected for any research must be appropriate to the objectives of the research. Yin (2003:5) compares the relevant situation for different research strategies according to three criteria: the degree of focus on contemporary as opposed to historical events, the extent of control an investigator has over actual behavioural events, and the type of research question posed. Table 6.4 presents these three criteria and show how each is related to five major research strategies: experiment, survey, archival analysis, history, and case study.

Strategy	Focuses on Contemporary Events?	Requires Control of Behavioural Events?	Form of Research Question
Experiment	Yes	Yes	How, why?
Survey	Yes	No	Who, what, where, how many, how much
Archival analysis	Yes/No	No	Who, what, where, how many, how much
History	No	No	How, why
Case study	Yes	No	How, why

Table 6.4 Relevant situations for different research strategies

Source Adapted from Yin (2003:5)

In this thesis, the main focus is on contemporary events, i.e. the current performance measurement system for a university, therefore the history strategy is not appropriate. For the extent of control an investigator has over actual behavioural events, it can be argued that the researcher has no control over the actual behavioural events at all. As a result, the experiment is not a proper strategy in this thesis. For the form of research question, in this thesis, research questions consist of both 'how' and 'what', as a result, both survey and case study are chosen as main methods in this study. Note that the archival analysis is identical to survey according to these three criteria. However a survey strategy is chosen instead of archival analysis because of the fact that most documents produced within a university are confidential therefore there is a major problem of accessing to the required data. This does not mean that archival analysis is not used at all in this thesis. Whenever is possible, document is also used for data triangulation. Such documents include Faculty's Self Assessment Reports (SAR) and documents related to quality assurance in the university. Documents are also used to help construct the questions used in both case study and survey research. The other advantage of the survey method is that it also provides efficient and accurate means of assessing information about the population. With survey research, statistic generalisation can be made and inference can also be 'made about the population ... on the basis of empirical data collected about a sample' (Yin, 2003:32).

6.5 Data collection method

Both case study research and survey are used as main research methods in this study, but for data collection, there are wide ranges of possible methods. In the case study research, there are at least six sources of evidence: documentation, archival records, interviews, direct observations, participant-observations, and physical artifacts (Yin, 2003:86). For the survey research, there are also several data collection methods including questionnaire, interview, and observation. However 'questionnaires and interviews are used extensively in surveys' (Easterby-Smith et al., 2002:135) as these data collection methods reflect one important characteristics of the survey, which are that 'the main way of collecting information is by asking people questions' (Fowler, 1988:9).

From these alternatives, both interview and questionnaire are carefully selected to answer the research questions in this thesis. The problems that lead to research questions are new, the change of the higher education environment as a result of new government policy. As a result, this rules out the possibility of using secondary data such as documentation, archival records, physical artifacts, or audiovisual materials because it is historical. Thus there are now three data collection methods available for the study; questionnaire, interview, and observation. Further analysis reveals that although observation provides information in the natural field setting, it is found to be inappropriate in this study because it needs a high level of personal involvement of the researcher. This is not possible because of the access problem. Furthermore it is more appropriate to small respondent group size, which is not the case in this study. Here the opinions of many staff are very important to the construction of the new model. Nevertheless in this study, documentation and observation are still used whenever possible to validate some results of the study.

Thus, both interview and questionnaire are selected as main data collection methods in this study because they are appropriate to collect data from a large group of respondents and access to the university is no longer a problem. Two methods are chosen to increase the validity of the research. This technique is called 'triangulation'.

Triangulation of sources of evidence are used in this study because a single method only 'captures a small slice of complex organizational reality' (Paul, 1996:136). There are four categories of triangulation: theoretical triangulation, data triangulation, investigator triangulation, and methodological triangulation (Easterby-Smith et al., 2002:146). Theoretical triangulation is when models from one discipline are used 'to explain situations in another discipline' (Easterby-Smith et al., 2002:146). Data triangulation refers to the collection of data from multiple sources (Yin, 2003:99). Investigator triangulation refers to research where data on the same situation is collected by different people (Easterby-Smith et al., 2002:146). The methodological triangulation is where both qualitative and quantitative methods are used for data collection (Easterby-Smith et al., 2002:146).

In this thesis, data triangulation is applied. Data triangulation is related to the collection of data from different sources, which in this case, are from interviews and questionnaires. The data triangulation or, in another name, between- (data collection) method triangulation, is the most popular version used (Jick, 1979). It is a vehicle for cross validation when multiple methods are 'found to be congruent and yield comparable data' (Jick, 1979:602). It attempts to 'leverage the strengths of several methods while mitigating their weaknesses. Leveraging is possible since the strengths of one method often compliment the weaknesses of another method' (Paul, 1996:136).

The use of triangulation is not new, it can be traced back to a study by Campbell and Fiske (1959) who developed the idea of multiple operationism. They argue that multiple methods should be used to ensure that variance is originated from the difference of the trait, not that of the method. The convergence or agreement of multiple methods enhances the validity of the research's results. Between-method triangulation therefore tests the degree of validity (Jick, 1979). The convergence of multiple methods is not the only benefit that can be obtained from triangulation. When data from multiple methods is not convergent, the researcher then needs to seek for explanations for divergent results. The researcher therefore may uncover unexpected results or unseen contextual factors. Divergent results from triangulation can also initiate an explanation of the research problem (Jick, 1979). Triangulation is therefore an appropriate in this study whereby both qualitative and quantitative data is collected to understand research proposition.

6.5.1 Methods used in the case study research

In this thesis, Thammasat University is chosen as the case study for three reasons. Firstly, Thammasat University represents a typical public university in Thailand. So the results obtained from this study can also be used in other universities in Thailand with minimum adjustments. Secondly it is also the place where the researcher works as a lecturer, so the process of data collection is more convenient and the quality of the data collected is believed to be higher than that available from other universities. The third reason is that at the time that the research is conducted, Thammasat University was also searching for a new performance measurement system.

Consequently, the results of the research can also be used to establish new performance measurement framework for the University.

The research techniques for data collection in the case study include interviews and questionnaires. The objectives of the case study research are to investigate the case study university, Thammasat University's structure and culture (to answer the first research question), the problems of the existing performance measurement system that is applied within Thammasat University (the second research question), the perception of university stakeholders on the use of EVA® and the Balanced Scorecard as the University's management tool (the third and fourth research questions) and to build the new model that incorporates EVA® and the Balanced Scorecard to be used as a university performance measurement framework (the fifth research question). The details of methods used in the case study are described as follows.

Interviews

Interviews are used to collect data in the case study. Interviewees are stakeholders of the Faculty of Commerce and Accountancy (or Business School), Thammasat University specifically

1. Management staff in the Faculty, which consists of Dean, Associate Dean, Assistant Dean, Head of Department, and Programme managers.
2. Academic staff in the Faculty
3. Administrative staff in the Faculty
4. Undergraduate student
5. Postgraduate student
6. Faculty financial supporter

All these stakeholders are 'experts' in the performance measurement framework. Management staff and academic staff in the Business School are very familiar with EVA® and Balanced Scorecard methodologies, therefore they can provide valuable insights into usage of these tools. Undergraduate and postgraduate students are also carefully selected according to their knowledge of these two methods. This can be

measured by asking them questions and reviewing their academic record on subjects that are closely related to the performance measurement framework. For the administrative staff within the Business School and the financial supporter, before inviting them to the interview session, their knowledge of EVA® and the Balanced Scorecard is also tested to assure that they possess the right level of knowledge and can provide the valuable opinion on its use in the University.

Another reason to select only stakeholders from the Business School is that all of these stakeholders possibly represent typical stakeholders in Thammasat University or even in other public universities in Thailand. Therefore the findings can possibly be subsequently transferred to these organisations. However it is fully understandable that the opinion obtained from this group of interviewees cannot be ‘statistically’ generalised to all staff in Thammasat University and other public universities in Thailand. Nevertheless the aim of case study research is to build the model based on the experts’ opinions. More opinions on the implementation of the model from staff in Thammasat University, other public universities, the related government agencies in Thailand, and the selected foreign universities are gathered in later stage of the study by using the survey research. The results from the survey can then be ‘statistically’ generalised to the opinions of all staff in public universities in Thailand.

Ten in-depth interviews are conducted in the period of October 2002 - February 2003 in the Faculty of Commerce and Accountancy, Thammasat University. Before each interview session, the interviewee is contacted in person or by formal letter. For those who agree to participate, an appointment is set up. For those who are unable to participate the interview session, the questionnaires are distributed instead.

Face-to-face interviews last between one and two hours. This interview is a semi-structured, using open-ended questions prepared before the interview session. However the structure and questions are flexible and can be changed or even added to during the interview session, depending on conversation between the researcher and the interviewee. During interview, a tape recorder is used with interviewee’s permission. Notes are also taken during the interview. After interviews, the tapes are transcribed and checked with the notes. The completed transcriptions are sent out to

each interviewee to review whether the transcriptions are correct. The schedule of interviews, including the place and time of the interview, is presented in Table 6.5.

Interviewee's role in organisation	Interview site	Date
Former Associate Dean – Graduate Study and International Relations	Thammasat University	22 nd October 2002
Associate Dean – Planning Development and Technology and Former MBA director	Thammasat University	4 th January 2003
Lecturer – Department of Accounting	Thammasat University	28 th October 2002
Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	Thammasat University	11 th January 2003
Assistant Dean – Graduate Study and International Relations	Thammasat University	25 th January 2003
Programme Director and Former Associate Dean – Academic Affairs	Thammasat University	19 th November 2002
Postgraduate Student – MBA	Thammasat University	29 th November 2002
Undergraduate Student	Thammasat University	2 nd December 2002
Administrative Officer	Thammasat University	8 th February 2003
University Financial Supporter	Interviewee's office	22 nd February 2003

Table 6.5 Schedule of the interview in the case study research

The questions used in the interview are structured in order to gather data to answer the first five research questions. Questions are constructed based on the Faculty Annual Report, the Self Assessment Report (SAR), and the framework of the external quality assessment for higher education institutions from the Office for National Education Standards and Quality Assessment (ONESQA). Other questions are constructed based on the data obtained by systematic observation by the researcher on the culture of the University.

The questions are listed in the following order:

1. Organisation structure and culture, which includes
 - 1.1. Awareness of mission
 - 1.2. Organisation structure
 - 1.3. Communication
 - 1.4. Control system

2. Existing performance measurement of the University, which includes awareness and uses of performance measures currently applied within the University
3. EVA® and the Balanced Scorecard, which includes
 - 3.1. Awareness and knowledge of these tools
 - 3.2. Perception of interviewee related to the application of these tools for the University
4. Additional comments on the performance measurement within the University

The example of questions used in the interview in the case study research is shown in Appendix 1.

In order to reduce interviewer and interviewee bias, the guideline proposed by Saunders et al. (2003:254) is followed. This states that key measures to overcome bias in interview include

- ‘[Interviewer’s] preparation and readiness for the interview
- The level of information supplied to the interviewee
- The appropriateness of [interviewer’s] appearance at the interview
- The nature of opening comments to be made when the interview commences
- [Interviewer’s] approach to questioning
- The impact of [interviewer’s] behaviour during the course of the interview
- [Interviewer’s] ability to demonstrate attentive listening skills
- [Interviewer’s] scope to test understanding
- [Interviewer’s] approach to recording information’ (Saunders et al. 2003:254)

The activities that are performed in order to reduce bias according to these measures are summarised in Table 6.6. These activities therefore help decrease interviewer and interviewee bias and increase the quality of data.

Key measures	Activities performed in the interview to reduce bias
Preparation and readiness for the interview	Interviewer studies the organisation and situational context before interview takes place. This activity is not difficult since the interviewer also works at the same place as most interviewees.
The level of information supplied to the interviewee	Relevant information including the interview theme is submitted to interviewee one day before interview where it is appropriate. This helps promote credibility, validity, and reliability of the interview.
The appropriateness of appearance at the interview	Researcher adopts a similar style of dress to interviewee. This is not difficult because of the fact that researcher also works in the same place as most interviewees.
The nature of opening comments	At the beginning of every interview, the purpose and outcome of the research are briefly outlined. The issue of confidentiality and anonymity is also reiterated to increase researcher's credibility and the interviewee's confidence.
Approach to questioning	Every attempt is made in order to ask questions that are understandable and most questions are open-ended, which help avoid bias of researcher. When confusion occurs to the interviewee, researcher tries to reduce it by rephrasing questions. Every unclear answer from the interviewee is further followed up by researchers.
The impact of behaviour during the interview	Researcher tries to avoid any behaviour that might indicate any bias during the interview. Researcher maintains appropriate posture and tone of voice that encourage the flow of conversation.
Ability to demonstrate attentive listening skills	Researcher tries to provide sufficient time for the interviewee to develop his/her answer or explanation. Careful listening allows researcher to understand response made by the interviewee.
Scope to test understanding	Once one topic is finished, before move on to another topic, researcher summarise what the interviewee has already explained. This helps researcher avoid bias and misunderstanding and it also allows interviewee to correct and adjust what might be inaccurate.
Approach to recording information	After each interview, tape recording is immediately transcribed and checked with the note taken during the interview. Full transcription is then prepared and submitted back to the interviewee to check whether it is what he/she intends to explain. This process also helps avoid bias from researcher.

Table 6.6 Activities performed in the process of interview to reduce bias

Questionnaires

The questions used in the questionnaire are similar to those used in the interviews in that they are structured to answer the first five research questions. Originally in

English and then translated into Thai the questionnaires are pretested by distributing to Thai academic staff in other universities. Comments on the questions and structure of the questionnaire are sought. The questionnaire is structured into six parts: the organisation structure and culture, the existing performance measurement, the study of EVA®, the study of the Balanced Scorecard, the conclusion, and the demographic data of respondent. The last part, the demographic data is an additional part that is not included in the questions in the interview because unlike the interview, the identification of respondent is not known. The questionnaire is designed to be completed within fifteen minutes. It is tested for the completion time before distribution.

The questions in the questionnaire are similar to that of the interview, consisting of both open-ended and fixed-alternative questions, and based on document analysis and observation by the researcher. There are choices in some fixed-alternative questions depending on the response of interviewees. This is possible because the questionnaires are distributed after all interviews have been conducted, and when data from interview has been analysed.

The order of questions in the questionnaire is the same as that of the interview plan as follows:

1. Organisation structure and culture, which includes
 - 1.1. Awareness of mission
 - 1.2. Organisation structure
 - 1.3. Communication
 - 1.4. Control system
2. Existing performance measurement of the University, which includes awareness and uses of performance measures currently applied within the University
3. EVA® and the Balanced Scorecard, which includes
 - 3.1. Awareness and knowledge of these tools
 - 3.2. Perception of interviewee related to the application of these tools for the University

4. Additional comments on the performance measurement within the University
5. Demographic data of the respondent

The example of the questionnaire used in this case study research is presented in Appendix 2.

Ninety-one questionnaires were distributed to all academic staff in the Business School, excluding the ones who participate the interview session and the ones who were on study leave abroad. The questionnaire was submitted to each respondent in person whenever possible with an explanation of the objectives of the study in an attempt to solicit a high response rate. All questionnaires were distributed in August 2003 and returned by September 2003. Further efforts to increase the response included follow-up telephone calls, asking in person, and submitting second questionnaires two weeks after the first distribution. After receiving each returned questionnaire, it was immediately checked for missing questions, and if any, researcher then asked the reason for this from respondent. Each questionnaire had its own number coding, therefore it could be tracked to each respondent, although there was no respondent's name specified in the questionnaire. This made the follow-up process more convenient as it did not annoy the persons who have already completed and returned the questionnaire.

6.5.2 Methods used in the survey research

Similar to the case study research, interviews and questionnaires are used to collect data in the survey. The objective of the survey was to investigate the perception of staff in universities and the related government agencies on the implementation of the new model (the sixth research question). The details of methods used in the survey are described as follows.

Interviews

Interviews are used to collect data in the survey. Interviewees are the staff in Thammasat University, which is the case study university and in Chiang Mai University. This is the only Thai university that currently adopts the Balanced

Scorecard as its performance measurement framework. In both universities, the interviewees include

1. Academic staff with management position
2. Academic staff without management position
3. Non-academic staff with management position
4. Non-academic staff without management position

Chiang Mai University was chosen so that the proposed model created from the case study research can be compared and contrasted to the Balanced Scorecard model that is used there. For Thammasat University, chosen as the case study, perceptions of the implementation of the model can also be tested. As a result, it was appropriate to ask for opinions from staff in the case study university before doing survey in other public universities in Thailand.

The representativeness of this sample of the opinion of all staff in other public universities in Thailand, or even just in Thammasat University, is open to question. However the aim of this interview is to obtain a detailed response on the use of the proposed model. Detailed information on views of the implementation strategy for the model is also obtained during the interview. However more opinions on views of the implementation of the model from staff in Thammasat University, other public universities in Thailand, related government agencies, and selected foreign universities are gathered by distributing the questionnaire more widely, as described in the next section.

Twenty-four in-depth interviews were conducted in the period of August - October 2004, eighteen with staff at Thammasat University and six with staff at Chiang Mai University. The interview process is similar to that used in the case study research. The interview was tape-recorded with the interviewee's permission and notes were also taken during the interview. After interviews, the tapes are transcribed and checked against the notes. The completed transcriptions are submitted to each interviewee to review whether the transcription is correct. Unlike the interview in the case study research, in this interview, the position of the interviewees is not discussed or recorded to maintain anonymity.

The structure of the questions in the interview is slightly different for each university. For Chiang Mai University, the main focus is on the implementation of the Balanced Scorecard, and initial questions about the driving and restraining change forces are followed by the questions about critical success factors for the implementation. The last group of questions is related to the acceptance of the Balanced Scorecard as being an appropriate performance measurement framework for their university. The example of questions used in the interview of staff in Chiang Mai University in the survey research is shown in Appendix 3.

For Thammasat University, the questions are also structured to gather data to answer the sixth research question, and are related to the implementation issues. Initial questions are related to the needs of the new performance measurement system in the University. Next group of questions is related to the driving and restraining change forces for implementation, and to the critical success factors. Finally the researcher demonstrates the use of the model and asks the interviewee to play with the model before asking for comments. The example of questions used in the survey for Thammasat University is shown in Appendix 4.

Interviewer and interviewee bias is considered in the same way as previously described in Table 6.6 for the interview in the case study research. Thus interview bias is reduced and quality of data obtained from the interview is improved.

Questionnaires

Questionnaires are used to collect data from staff in the following organisations

1. Thammasat University
2. Chiang Mai University
3. Other public universities in Thailand
4. Government agencies: The Commission on Higher Education and ONESQA
5. Foreign universities that are currently applying the Balanced Scorecard

The main objective of the questions asked in the questionnaire is to collect the data to answer the sixth research question. Originally in English and then translated into Thai, the questionnaires are pretested by distributing to Thai academic staff in other universities. Comments on the questions and structure of the questionnaire are sought. Most of the questions use the Likert scale to measure respondents' attitudes indicating how strongly they agree or disagree with statements that are related to the implementation of the performance measurement framework. The Likert scale is used because the required data is a measure of the attitude of the respondent, and the Likert scale is a universally accepted way to do this.

Questions related to the implementation of the performance measurement framework are based on the concept of change management from the literature. There are three slightly different versions of questionnaire distributed to staff in different groups of organisation. In all versions of the questionnaire, there are two main parts concerning the implementation of the performance measurement framework, and the demographic data of the respondent. The versions are as follows:

1. Questionnaire for staff in Thammasat University, other public universities, and the related government agencies: In this version, the first group of questions was related to the needs of the new performance measurement system in the University. Next group of questions was related to the driving and restraining forces of the implementation of the new performance measurement system into the University. After that the questions of the critical success factor were asked. At the end of the first part, there were additional questions of the estimation of the correlation between objectives presented in the strategy map for the Balanced Scorecard for the University. At the end of the questionnaire the questions regarding to demographic data of respondent were included. The example of questionnaire distributed to staff at Thammasat University, other public universities, and the related government agencies in the survey research is shown in Appendix 5.

2. Questionnaire for staff in Chiang Mai University: In this version, the main focus of the questions was on the implementation of the Balanced Scorecard. In the questionnaire, the questions about the driving and restraining forces for implementing the Balanced Scorecard were firstly asked followed by the questions of critical success factor of the Balanced Scorecard implementation. The last group of questions was related to the satisfaction of the Balanced Scorecard as being the performance measurement framework. The example of questionnaire distributed to staff at Chiang Mai University is shown in Appendix 6.
3. Questionnaire for staff in the selected foreign universities. In this version, the sequence of the questions was similar to that of the questionnaire for staff at Thammasat University, other public universities, and the related government agencies except that the questions of the estimation of the correlation between objectives presented in the strategy map were not included into the questionnaire because this strategy map was built according to the context of Thai university thus it was inappropriate to incorporate the opinion from staff in foreign universities because there were much difference in the context. Additionally in this version of questionnaire for staff in foreign universities, there were questions regarding to the use of the Balanced Scorecard for the university. This was to test whether those universities actually adopt the Balanced Scorecard as they were mentioned to. The example of questionnaire distributed to staff at the selected foreign universities in the survey research is shown in Appendix 7.

The summary of the number of questions in each part and approximate time used for all versions of the questionnaire are presented in Table 6.7. The number of distributed questionnaires, target population, and the method of distribution are different for different organisations. Table 6.8 summarises the number of questionnaire distributed to each organisation, target population, and the method of the distribution.

Topic in questionnaire		Number of questions	Approximate time used
Questionnaire distributed to staff at Thammasat University, other public universities, and the related government agencies			
Part 1	The implementation of the performance measurement framework	44	19 minutes
Part 2	The demographic data of respondent	8	1 minute
Total		52	20 minutes
Questionnaire distributed to staff at Chiang Mai University			
Part 1	The implementation of the Balanced Scorecard	42	20 minutes
Part 2	The demographic data of respondent	7	1 minute
Total		49	20 minutes
Questionnaire distributed to staff at the selected foreign universities			
Part 1	The implementation of the performance measurement framework	37	15 minutes
Part 2	The demographic data of respondent	9	1 minute
Total		46	16 minutes

Table 6.7 Structure of questionnaire, number of questions, and approximate time used for each version of the questionnaire used in the survey research

Submitted to	Amount submitted	Target population	Method
Staff in Thammasat University	250	▪ Staff with management position	Mailing questionnaire and distributing in person
Staff in other public universities in Thailand	512	▪ Staff with management position	Mailing questionnaire
Staff in the related government agencies	40	▪ Senior official	Mailing questionnaire
Staff in Chiang Mai University	86	▪ Staff with management position	Mailing questionnaire and distributing in person
Staff in foreign Balanced Scorecard universities	29	▪ Staff with management position	Internet questionnaire

Table 6.8 The number of questionnaire distributed to each organisation, target population, and the method of the distribution

Two hundred and fifty questionnaires were distributed to staff with management position at Thammasat University by mailing or submitting in person. In this research, staff with management position refers to both academic staff and non-academic staff who hold one of these positions: the Rector, Associate Rector, Assistant Rector, Dean, Associate Dean, Assistant Dean, Head of Department,

Director of the Institutes or Centres, Head of Supporting Unit or any other type of unit. The reason to choose only management staff was that management staff are the potential users of the model that is created from the case study research. Management staff are also responsible for establishing the performance measurement framework. The method used was the stratified random sampling, which the study population is grouped according to the academic-non-academic type of management staff. In case of Thammasat University, the number of total staff (both academic and non-academic) was 5,070 with 391 staff (7.7% of total staff) holding management positions. Out of these management staff, 70% were academic staff and 30% were non-academic staff. As a result the number of academic staff that had management position is 274 and the population of non-academic staff who had management position is 117. By applying the formula for sample size with a margin of error that does not exceed 5% and with 95% percent level of confidence, the total number of sample was 250 with 160 academic staff and 90 non-academic staff. Table 6.9 illustrates the population and sample of the survey. The details of calculation of the sample size are shown in Appendix 8.

Type of staff	Population		Sample		Percentage of sample to population
	Number	Percentage	Number	Percentage	
Academic	274	70%	160	64%	58%
Non-academic	117	30%	90	36%	77%
Total	391	100%	250	100%	64%

Table 6.9 The population and sample in the survey in Thammasat University

Five hundred and twelve questionnaires were also distributed to all senior management staff in all other sixteen public universities in Thailand excluding Thammasat and Chiang Mai University. The definition of ‘senior management staff’ is similar to that of the survey at Thammasat University except that it does not include the position that is lower than the Dean. Again management staff in other public universities justifying the sample is that management staff is the potential users of the model created in this research. It was more efficient to mail the questionnaires to staff in these sixteen public universities with the covering letter explaining the objectives of the research rather than distributing them personally.

The list of these sixteen public universities and number of distributed questionnaire is shown in Table 6.10.

Name of university	Number of distributed questionnaire
1. Burapha University	21
2. Chulalongkorn University	59
3. Kasetsart University	49
4. Khon Kaen University	48
5. King Mongkut's Institute of Technology Ladkrabang (KMITL)	28
6. King Mongkut's Institute of Technology North Bangkok (KMITNB)	24
7. Maejo University	22
8. Mahasarakham University	31
9. Mahidol University	54
10. Naresuan University	22
11. National Institute of Development Administration (NIDA)	28
12. Prince of Songkla University	41
13. Silpakorn University	33
14. Srinakharinwirot University	24
15. Thaksin University	19
16. Ubon Rajathanee University	9

Table 6.10 A list of public universities and number of distributed questionnaire to staff in each university in the survey

The same type of questionnaire was also distributed to staff in related government agencies. These two government agencies, the Commission on Higher Education, and ONESQA, have the responsibility on monitoring the performance of all public universities in Thailand. Forty questionnaires were distributed to all senior officials in these two organisations by mailing (nineteen questionnaires are distributed to the Commission on Higher Education and twenty one to ONESQA).

Eighty-six questionnaires were distributed to all management staff in Chiang Mai University. Again the definition of 'management staff' is similar to that of the survey at Thammasat University, except that it does not include positions lower than that of Dean because Faculty is the lowest level at which the Balanced Scorecard is applied (Departments, for example, do not have their own Balanced Scorecard). The method of the distribution is also similar, which use both mailing and submitting in person.

Finally the questionnaires were also distributed to staff in foreign universities which currently apply the Balanced Scorecard. The list of these universities was gathered by asking academics and practitioners from the Performance Measurement Association, and searching via the Internet. There are currently twenty-nine universities in English-speaking countries that are reported as using the Balanced Scorecard. Twenty-nine questionnaires were distributed directly to the unit in each university that reportedly uses the Balanced Scorecard. When the Balanced Scorecard is used for the whole university a questionnaire is sent directly to a member of senior management staff who is responsible on its implementation. However, here the questionnaire was constructed in the website and an email was sent asking the target respondent to fill in the questionnaire by providing the address of the website. The data obtained from each questionnaire was later gathered from the website when the deadline was passed. This method was selected because it required less time and cost, and the questionnaire can be directed to the most appropriate person who has the experience of using the Balanced Scorecard for a university. The list of the universities that are using or mentioned to use the Balanced Scorecard and the unit that implements the Balanced Scorecard is shown in Table 6.11.

University	Country	Unit that implements the Balanced Scorecard
1. University of California at San Diego	US	Business Affairs
2. University of California at Davis	US	Division of Administration
3. University of California at Berkeley	US	Business and Administration Services Division
4. University of California at Los Angeles	US	Administrative Information System, Business Administration Service
5. University of California at Irvine	US	Division of Business and Administration Services
6. University of California at Santa Cruz	US	Business and Administration Service
7. University of California at San Francisco	US	Campus Auxiliary Services
8. California State University, Northridge	US	N/A
9. California State University, San Marcos	US	Finance and Administrative Service

Table 6.11 A List of universities that currently apply the Balanced Scorecard

University	Country	Unit that implements the Balanced Scorecard
10. California State University, San Bernardino	US	Administration and Finance
11. Florida International University	US	Whole university
12. University of Louisville	US	Whole university
13. University of Missouri, Kansas City	US	Whole university
14. Ohio State University	US	N/A
15. University of Vermont	US	Whole university
16. University of Akron	US	Whole university
17. University of Virginia	US	Library
18. Fort Heys State University	US	Whole university
19. University of Florida	US	Library
20. University of Edinburgh	UK	Whole university
21. University of Warwick	UK	N/A
22. Glasgow Caledonian University	UK	N/A
23. Napier University	UK	N/A
24. Open University	UK	N/A
25. Sheffield Hallam University	UK	N/A
26. Deakin University	Australia	Library
27. RMIT	Australia	Whole university
28. Bond University	Australia	Whole university
29. Carleton University	Canada	Finance and Administration

Table 6.11 A List of universities that currently apply the Balanced Scorecard (continued)

All of these three versions of questionnaires were distributed in August 2004 and were returned by September 2004. Follow up methods again included follow-up letters, emails, telephone calls, and asking in person whatever is possible. Every questionnaire had its own number coding, therefore it could be tracked to each respondent, although there is no respondent's name specified in the questionnaire. This made the follow-up process more convenient.

Issues of the reliability and validity of the survey are discussed in Chapter Nine. Tests of reliability in the survey research include test-retest and alternate-form method. The tests of validity include content validity and construct validity.

The data analyses, results, and findings of the case study research are discussed in more details in the Chapter Seven, while the results from the survey research are later discussed in the Chapter Nine.

CHAPTER SEVEN: FINDINGS AND RESULTS

This chapter presents the findings and results of the case study, which aims to answer first five research questions as previously mentioned in Chapter Six. The fifth research question, the construction of the model and the sixth research question, the implementation of the model, are however presented in Chapter Eight and Nine respectively. The topics covered in this chapter include

1. *Background of the case.* Before presenting the findings and results of the case study, background information of the case, the Thammasat University and Faculty of Commerce and Accountancy, is presented in this section.
2. *Data analyses.* This part is separated is into four sections: section I: the organisation structure and culture, section II: the existing performance measurement, section III: the use of EVA®, and section IV: the use of the Balanced Scorecard.
3. *Findings in the case study research.* The results of the study obtained from data analyses in previous section are concluded in this section. The findings in the case study research are then used as a basis for the construction of the model.
4. *Quality of case study research.* In this section, the quality of the case study research, which includes the topic of validity and reliability, is discussed.

7.1 Background of the case

Thammasat University

Thammasat University was established by the Thammasat University Act in 1933. It was inaugurated on 27 June 1934 as an open university. The objective of the university at that time was to propagate the learning of law and politics to Thai citizen. The university was then named, ‘The University of Moral Science and Politics’.

The University has been developed over seventy years. The milestones of the development can be summarised in Table 7.1.

Year	The milestones of the development
1934	The University was inaugurated as an open university and named, ‘The University of Moral Science and Politics’
1949	There were four major fields of study: Law, Commerce and Accountancy, Political Science and Diplomacy, and Economics
1952	The name of the University was changed from ‘The University of Moral Science and Politics’ to ‘Thammasat University’
1954	The fields of Social Work and Journalism were added
1955	The Institute of Public Administration, offering a postgraduate program, was established
1962	The University introduced liberal arts education with the founding of the Faculty of Liberal Arts
1984	The Department of Sociology was upgraded to become the Faculty of Sociology and Anthropology and the Department of Journalism became the Faculty of Journalism and Mass Communication
1986	The new campus site at Rangsit was opened to new students. The Faculty of Science and Technology was established and situated on the new campus site
1991	The Faculty of Medicine was established at the Rangsit Campus
1993	The University began admitting graduates for a doctoral programme in Business Administration

Table 7.1 The milestones of Thammasat University development

At the present, Thammasat University has fifteen faculties: Law, Commerce and Accountancy, Political Science, Economics, Journalism and Mass Communication, Liberal Arts, Science and Technology, Social Administration, Sociology and Anthropology, Engineering, Medicine, Allied Health Science, Dentistry, Nursing, and Graduate School. The University also has five institutes: the Thai Khadi Research Institute, the Information Processing Institute for Education and Development, the Human Resources Institute, the Institute of East Asian Studies, and the Language Institute. The academic structure of the University is shown in Figure 7.1.

The University’s administration is divided into eight major areas: General Administration, Academic Affairs and Research, Personnel Administration, Finance and Property Management, Student Affairs, Planning and Development, Office of International Affairs, and Rangsit Administration. The Associate Rectors heading these divisions report directly to the Rector. The administration structure of the University is shown in Figure 7.2.

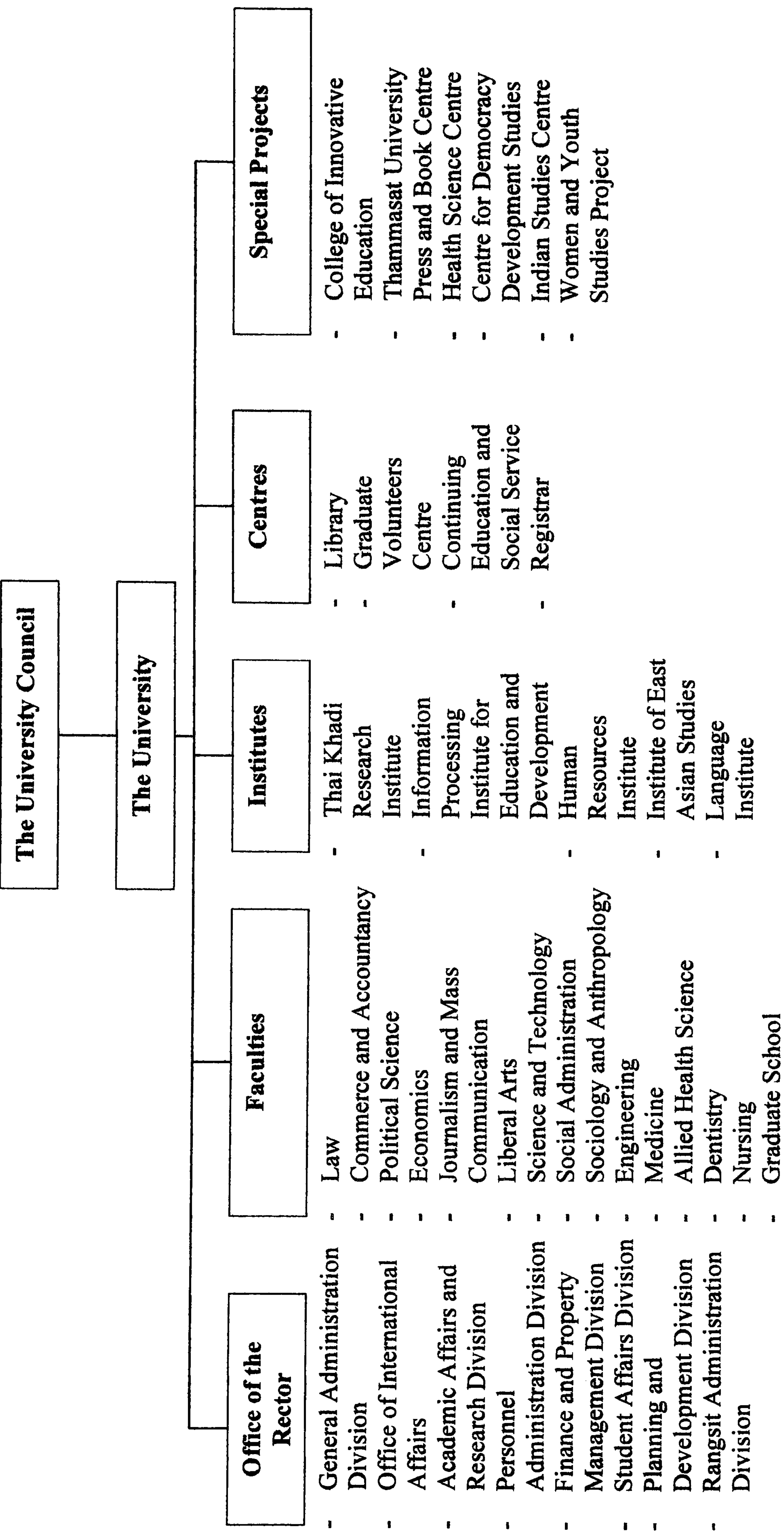


Figure 7.1 Academic structure of Thammasat University

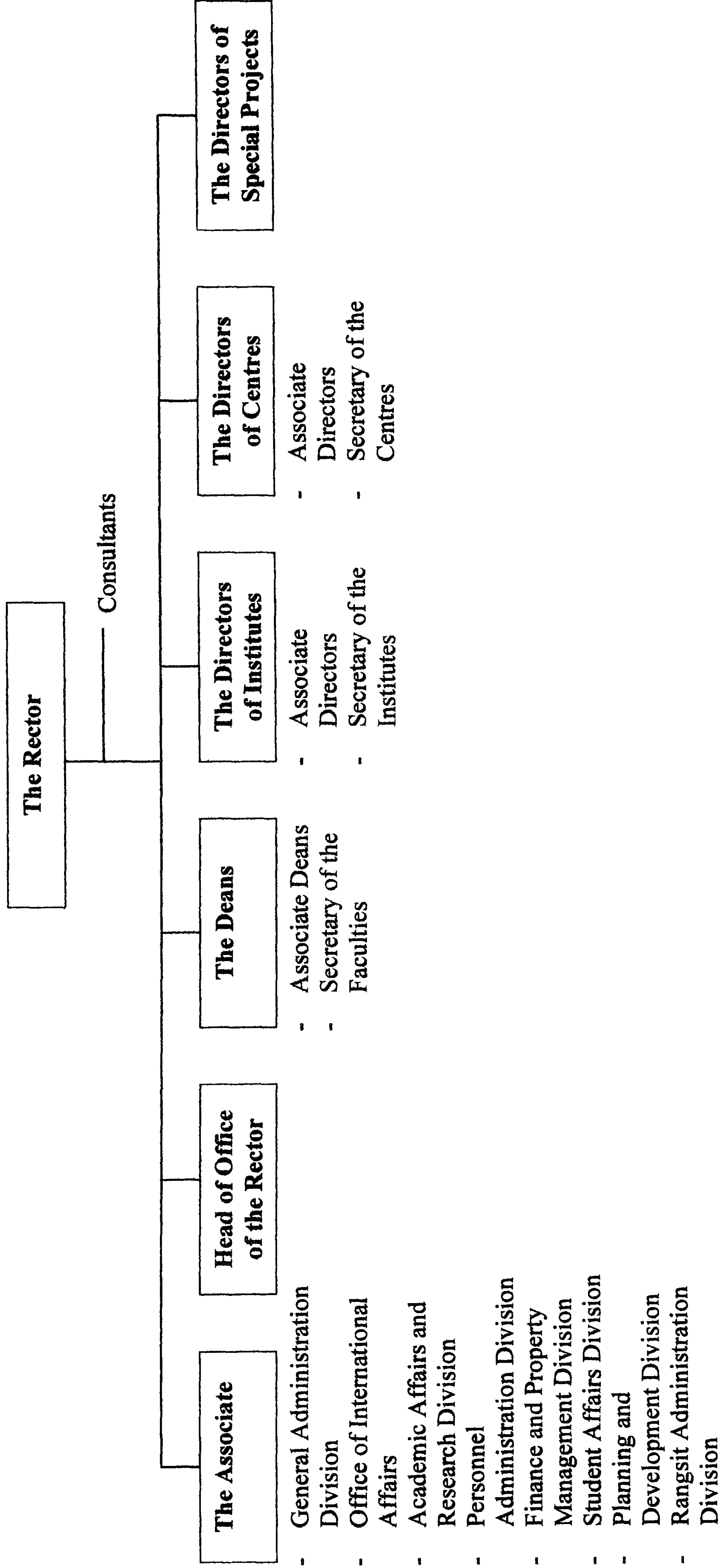


Figure 7.2 Administration structure of Thammasat University

At the present, the University has 27,368 full time equivalent students with 74% are in the undergraduate level, 24% in the master level, 1% in doctoral level, and less than 1% in the certificate level. The University also employs the total of 5,070 staff. 26% are academic staff who teach and do the research, 21% are academic support staff, 33% are administrative staff, and 20% are temporary operating staff.

For the funding, the University receives the grant from the government for the total amount of £19.1 million annually (at the exchange rate of 76 Thai Baht per £1). In addition to the government funding, the University also generates its own income of £15.3 million (at the exchange rate of 76 Thai Baht per £1). Therefore the University receives the total amount of £34.4 million annually. 83% of this funding is used as the operating expenses and 17% is for the investment in the University.

Faculty of Commerce and Accountancy

The Faculty of Commerce and Accountancy in Thammasat University consists of eight academic departments as follows

1. Department of Accounting
2. Department of Finance
3. Department of Marketing
4. Department of Management Information Systems
5. Department of Human Resources and Organisation Management
6. Department of Industrial and Operations Management
7. Department of International Business and Transportation
8. Department of Real Estate Business

The Faculty offers many academic programmes, mostly at postgraduate level. Each programme is headed by a Director. Programmes in the Faculty include

1. Bachelor of Business Administration (BBA) Programme
2. Real Estate Business Programme
3. Master of Business Administration (MBA) Programme
4. Executive Master of Business Administration (EX-MBA) Programme
5. Master in Accounting (MAP) Programme

6. Master in Marketing (MIM) Programme
7. Master in Finance (MIF) Programme
8. MBA with Concentration on Human Resource Management (HRM) Programme
9. Doctor of Philosophy in Marketing (DPM) Programme
10. Joint Doctoral Programme in Business Administration (JDBA)
11. MBA in International Business (IMBA) Programme

The Faculty is headed by the Dean of Faculty who works with Faculty Committee to make important decisions. The Dean works under the management of Rector of the University who in turn works under the University Council. Within the Faculty, there are currently six Associate Deans who assist the Dean in six different areas; academic affairs (Bachelor's), academic affair (graduate study), research, international relations and academic service, administration and information system, and finance and planning. A Faculty management committee also assists the Dean in making important decisions. This management committee consists of the Dean, Associate Deans, Assistant Deans, and all Heads of Department. The Faculty also has units to support all administrative work within the Faculty. These units cover administration, finance and material, policy and planning, education and academic service, and graduate study and international relations. The academic structure and the administrative structure of the Faculty are shown in Figure 7.3 and 7.4 respectively.

Based on information from Self Assessment Report 2003 (Faculty of Commerce and Accountancy, 2003), the Faculty has 107 full time lecturers and 166 non-academic staff. There are 4,202 students in the Faculty, including 2,069 undergraduate students in Thai programmes, 398 undergraduate students in international programmes, 117 students in certificate programmes, 1,581 students in master degree programmes, and 37 doctoral students.

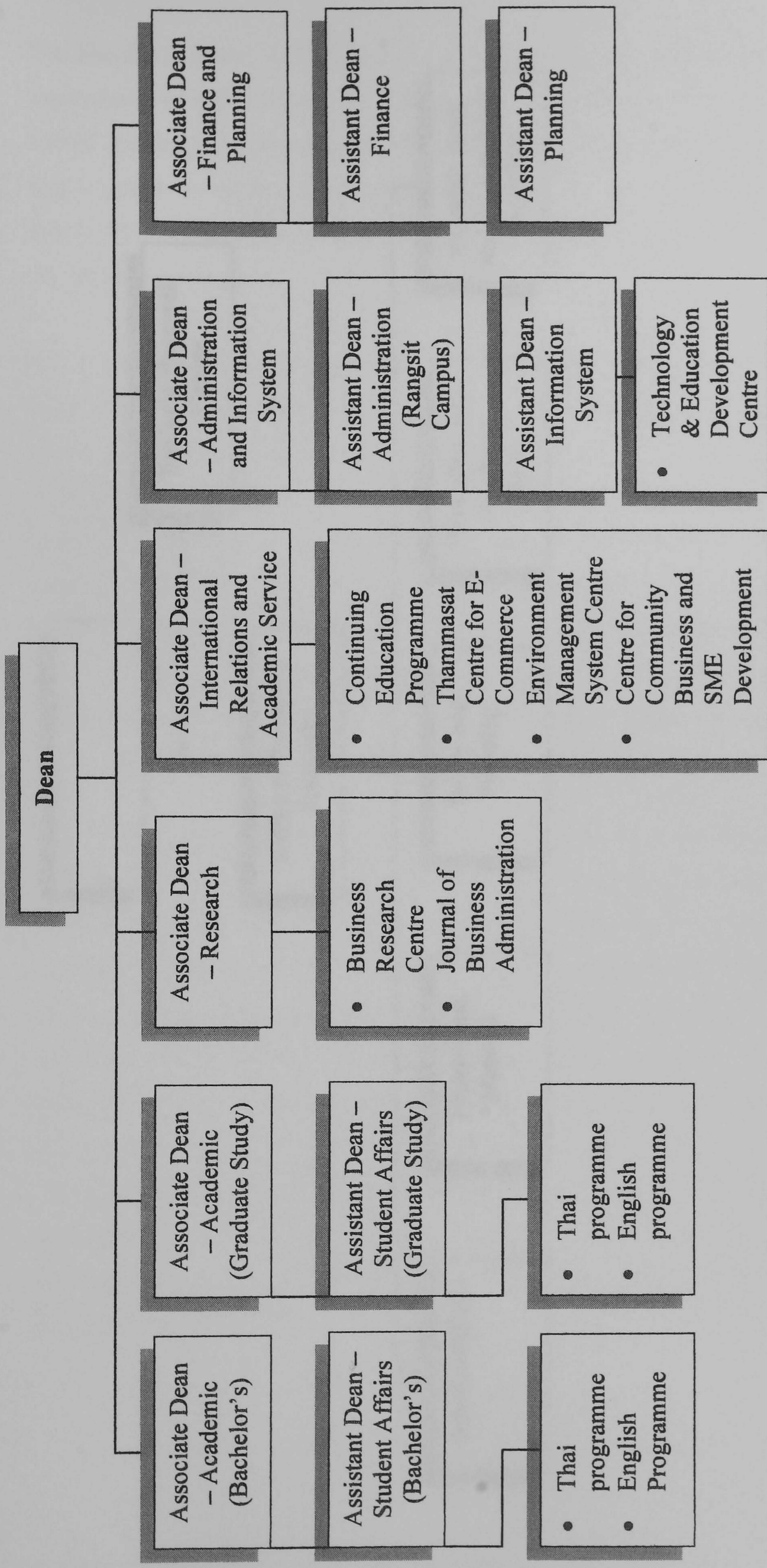


Figure 7.3 Academic structure of the Faculty of Commerce and Accountancy

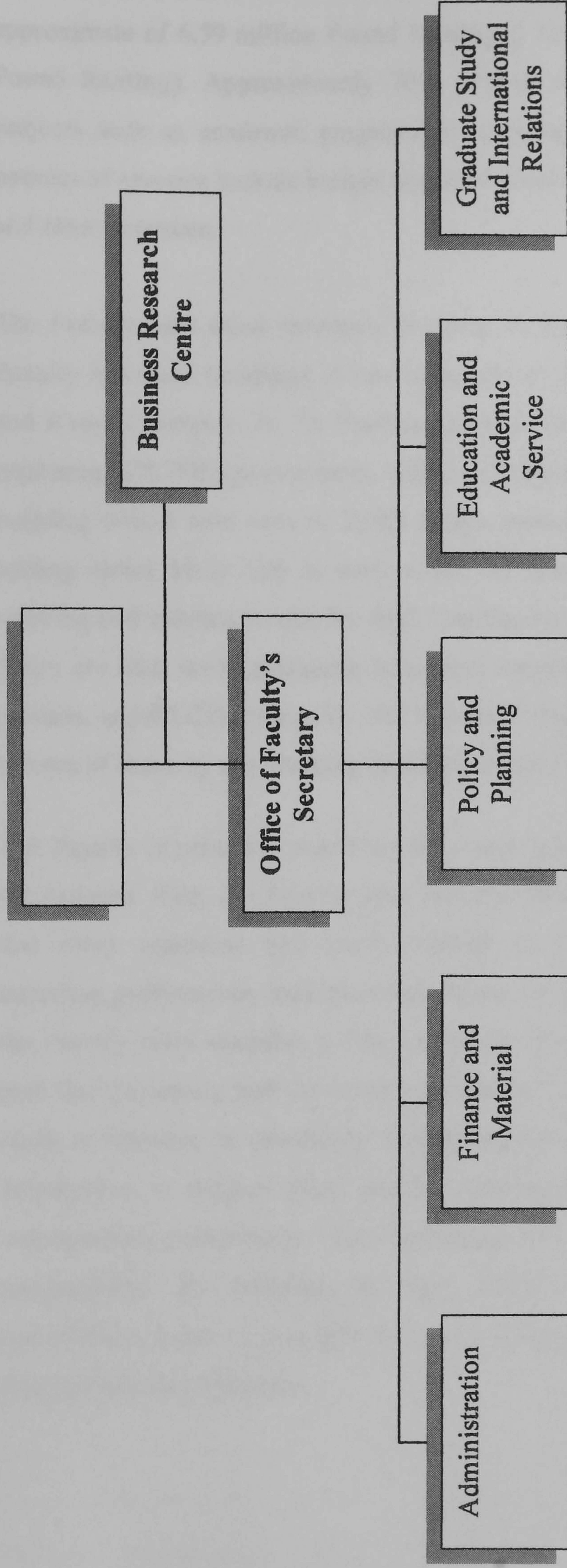


Figure 7.4 Administration structure of Faculty of Commerce and Accountancy

The Faculty has total annual revenue of an approximate of 500 million Baht (an approximate of 6.59 million Pound Sterling at the exchange rate of 76 Baht per one Pound Sterling). Approximately 70% of total revenue is from academic service projects such as academic programmes, training, and consultancy services. Other sources of revenue include budget allocated from the University, government budget, and other revenues.

The Faculty uses these revenues to invest in teaching and learning facilities. The Faculty has main buildings in two campuses of the University, Ta Prachan campus and Rangsit campus. At Ta Prachan campus, the Faculty has one building with a total area of 9,360 square metres, while at Rangsit campus; the Faculty also has one building with a total area of 2,605 square metres. The Faculty has 34 classrooms, seating either 60 or 100 in each room, 56 working offices for lecturers, and 17 working and meeting rooms for staff. The Faculty has three libraries (45,261 books). There are also seven computer laboratory rooms with 168 personal computers, 35 printers, and 6 LCD projectors. The Faculty is therefore regarded as the best Faculty, in term of learning and teaching facilities, in the University.

The Faculty is presently searching for a new performance measurement system for two reasons. First, the Faculty must comply with University and government policy that every academic unit must establish an internal quality assurance system, including performance indicators that reflect the performance of that unit. Therefore the Faculty must establish a new performance measurement system that reports to both the University and the related government agency. Secondly, the Faculty also needs to improve its operations. Management in the Faculty therefore needs useful information to support their decision making and to monitor and diagnose its organisational performance. The Faculty has therefore established a committee with responsibility for building the new performance measurement system. This committee consists of lecturers in various academic departments. The researcher is also part of this committee.

7.2 Data analyses

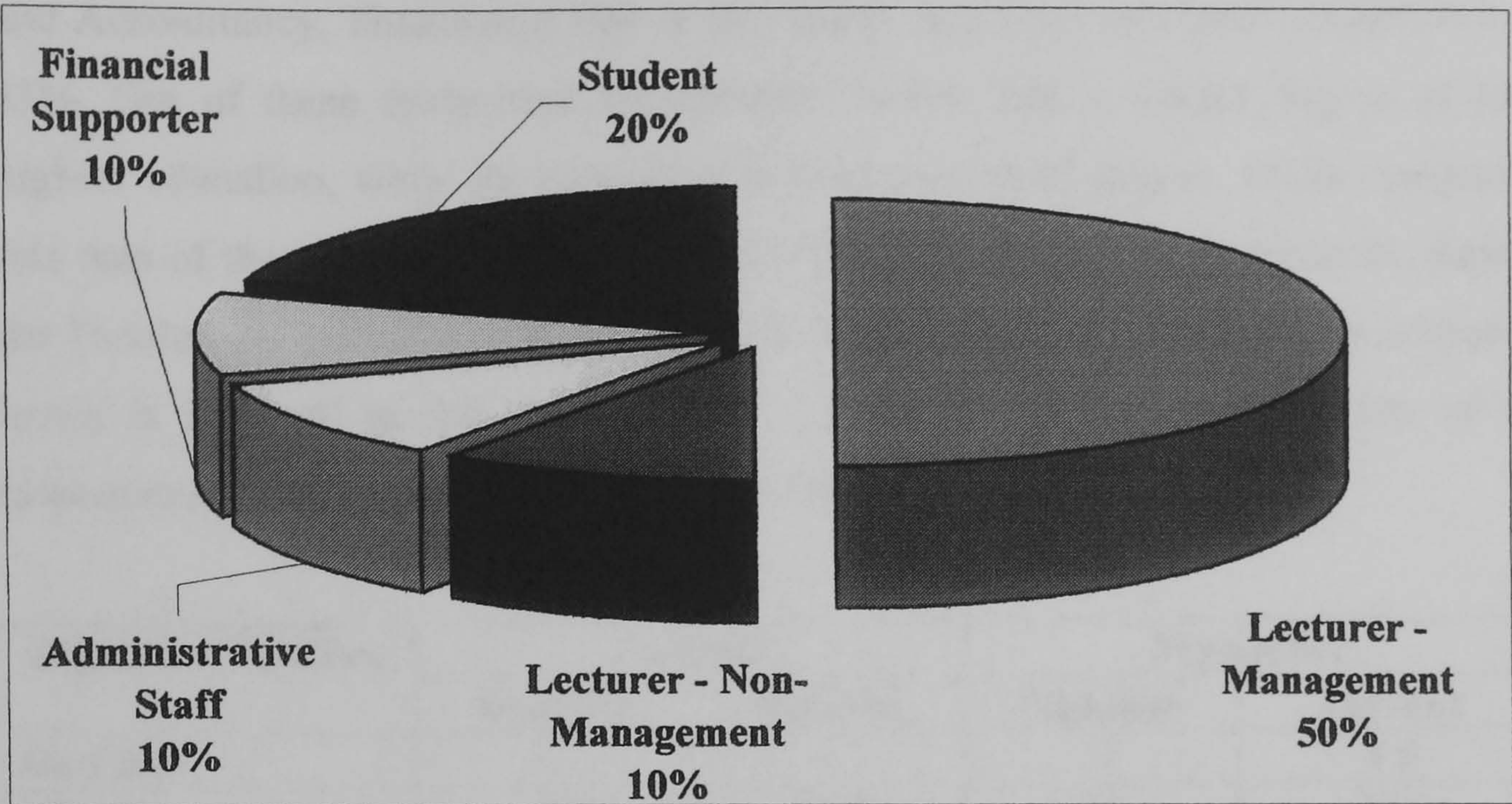
In this section, the data collected from two methods in case study research: interview and questionnaire, is analysed. However the data collected from observation and documentation is also analysed whenever is possible. Before presenting the results in each section, the demographic profile of the interviewees in the interview session and of the respondents who respond to the questionnaire are explored. The observation and documentation used in this study whenever is available are also described.

Demographic data of the interviewees

Interviewees are the Faculty or University stakeholders including, lecturers, students, administrative staff, financial supporter, and other staff holding different managerial and quality assurance positions. The list of interviewee is presented earlier in Table 6.5. Four interviewees obtain doctoral degree and another four obtain master degree as their highest academic award, with two interviewees having a bachelor degree. None of them has lower than undergraduate level of education. Five interviewees are lecturers at the University who hold (or recently held) management positions in the University (Associate Dean, Assistant Dean, and Director). Five interviewees do not hold an academic position, two interviewees are Assistant Professor and three are Associate Professor as shown in Figure 7.5. All interviewees except the financial supporter work for or study in the Faculty of Commerce and Accountancy. They work across various subjects such as accounting, finance, management information system, and industrial and operations management. Figure 7.6 illustrates the department that interviewees work for or study in.

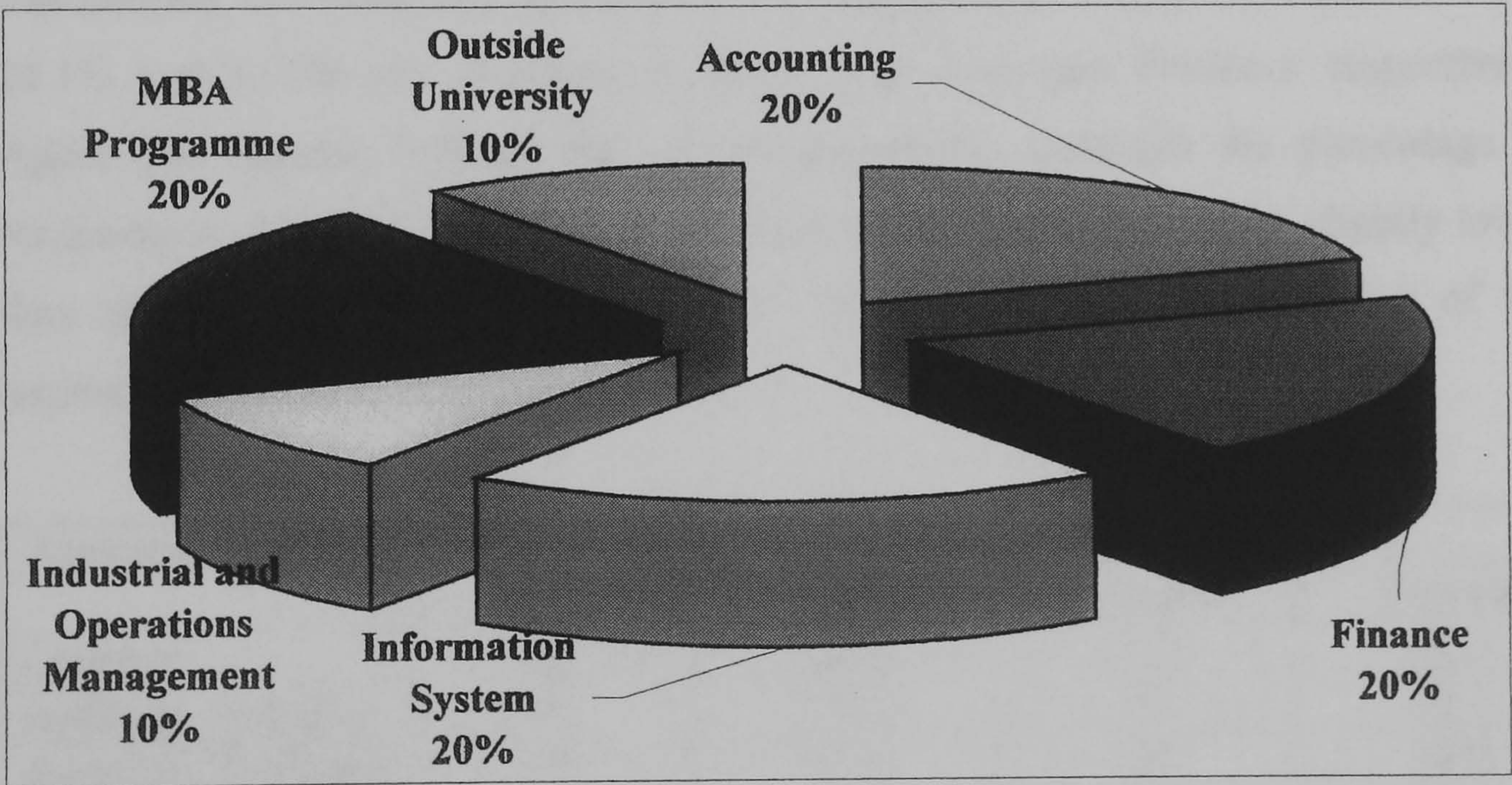
In conclusion, the interviews are conducted with interviewees who have very high education (most of them obtain master or doctoral degree) with various positions in the University ranging from management, lecturer, administrative staff, manager or director, quality assurance officer, financial supporter, and student. Furthermore, interviewees also work in various disciplines in the Faculty such as accounting, finance, management information system, operations management and

interdisciplinary programme such as the MBA. Therefore the opinion and perception come from different perspectives, which will certainly benefit the study.



**Total number of interviewees is 10*

Figure 7.5 Position of the interviewees in the University in the case study research



**Total number of interviewees is 10*

Figure 7.6 Department that the interviewees work for or study in the case study research

Demographic data of the respondents of the questionnaire

Out of ninety-one questionnaires distributed to lecturers in the Faculty of Commerce and Accountancy, Thammasat University, thirty-nine were returned, a return rate of 43%. Out of these thirty-nine respondents, 76.9% hold a master degree as their highest education, while the rest (23.1%) hold a doctoral degree. When comparing this data of the highest education to that of the population, i.e. all academic staff in the Faculty, the percentage is very similar. Therefore any bias relating to education levels is minimal in this study. Table 7.2 shows the highest education of the respondents compared to those of the population.

Highest education	Sample		Population	
	Number	Percent	Number	Percent
Bachelor	-	-	2	1.9
Master	30	76.9	81	75.9
Doctoral	9	23.1	24	22.2
Total	39	100.00	107	100.00

Table 7.2 Highest education of the respondents in the case study research

Considering the academic position of the respondents, 35.9% are lecturer, while 23.1% and 41.0% are Assistant Professor and Associate Professor respectively. Again this number reflects that of the population, although the percentage of respondents who hold the academic position of Assistant Professor is slightly lower than those of the population. Table 7.3 shows the academic positions of the respondents and the population.

Academic position	Sample		Population	
	Number	Percent	Number	Percent
Lecturer	14	35.9	33	30.8
Assistant Professor	9	23.1	35	32.7
Associate Professor	16	41.0	38	35.5
Professor	-	-	1	0.9
Total	39	100.00	107	100.00

Table 7.3 Academic position of the respondents in the case study research

When considering departments worked for, the percentage is different from that of the population. Most respondents are from the Department of Industrial and Operations Management (30.8% of total respondents), while percentage of lecturer

who works in this department is only 13.1% of the total number of lecturer in the Faculty. However this is not surprising, as it is the Department that researcher works for therefore the response rate from academic staff from this department is very high. Table 7.4 presents the Departments that respondents are from.

Department	Sample		Population	
	Number	%	Number	%
Accounting	6	15.4	23	21.5
Finance	6	15.4	19	17.8
Marketing	3	7.7	15	14.0
Management Information System	3	7.7	11	10.3
Human Resources and Organisation Management	4	10.3	15	14.0
Industrial and Operations Management	12	30.8	14	13.1
International Business and Transportation	3	7.7	8	7.5
Real Estate Business	2	5.1	2	1.9
Total	39	100.00	107	100.0

Table 7.4 The Department of the respondents in the case study research

In order to find the demographic data of the respondents who are the major group of this study, a cross tabulation of the age and the highest education is shown in Table 7.5.

Highest Education	Age				Total
	21-30	31-40	41-50	51-60	
Master	7.7%	12.8%	25.6%	30.8%	76.9%
Doctoral		15.4%	7.7%		23.1%
Total	7.7%	28.2%	33.3%	30.8%	100.0%

**Total number of respondents is 39*

Table 7.5 Cross Tabulation – Age and Highest Education

Ages of respondents are varied. 7.7% are between 21-30 years old, 28.2% are between 31-40 years old, 33.3% are between 41-50 years old and 30.8% are above 51 years old. The respondents who have a master’s degree and have the age of 51-60 years account for almost one-third of all respondents, and are the largest group in this study.

In conclusion, the demographic data of the respondents are very similar to those of the population therefore bias in response pattern is minimal.

Documentation

Documentation used in this study whenever is possible includes the list of academic staff including the name, position, department, age, and time with the University. It is used for the design of interview arrangements, questionnaire distribution, calculation of response rate of the questionnaire distribution, and cross tabulations. The Self Assessment Report (SAR) and the Faculty's annual report are also used as a document for analyses of section I: the organisation structure and culture and of section II: the existing performance measurement. Other documents used in this study include memos, circulated letters, announcements, reports, and minutes of meetings. These documents are used for the analyses of communication within the organisation.

Observation

Similar to documentation, the observation is performed whenever is possible in the first two parts of this study. Topics that have been observed include the uses of the mission statement within the Faculty, the Faculty's organisational structure, communication channels within the Faculty, the control system, and existing performance measurement in the Faculty.

Following consideration of the demographic data of interviewees and questionnaire respondents, the documentation used in this study, and the observations that have been performed, the results of the case study are now presented in four main sections as follows.

7.2.1 Section I: The organisation structure and culture

This section aims to answer the first research question:

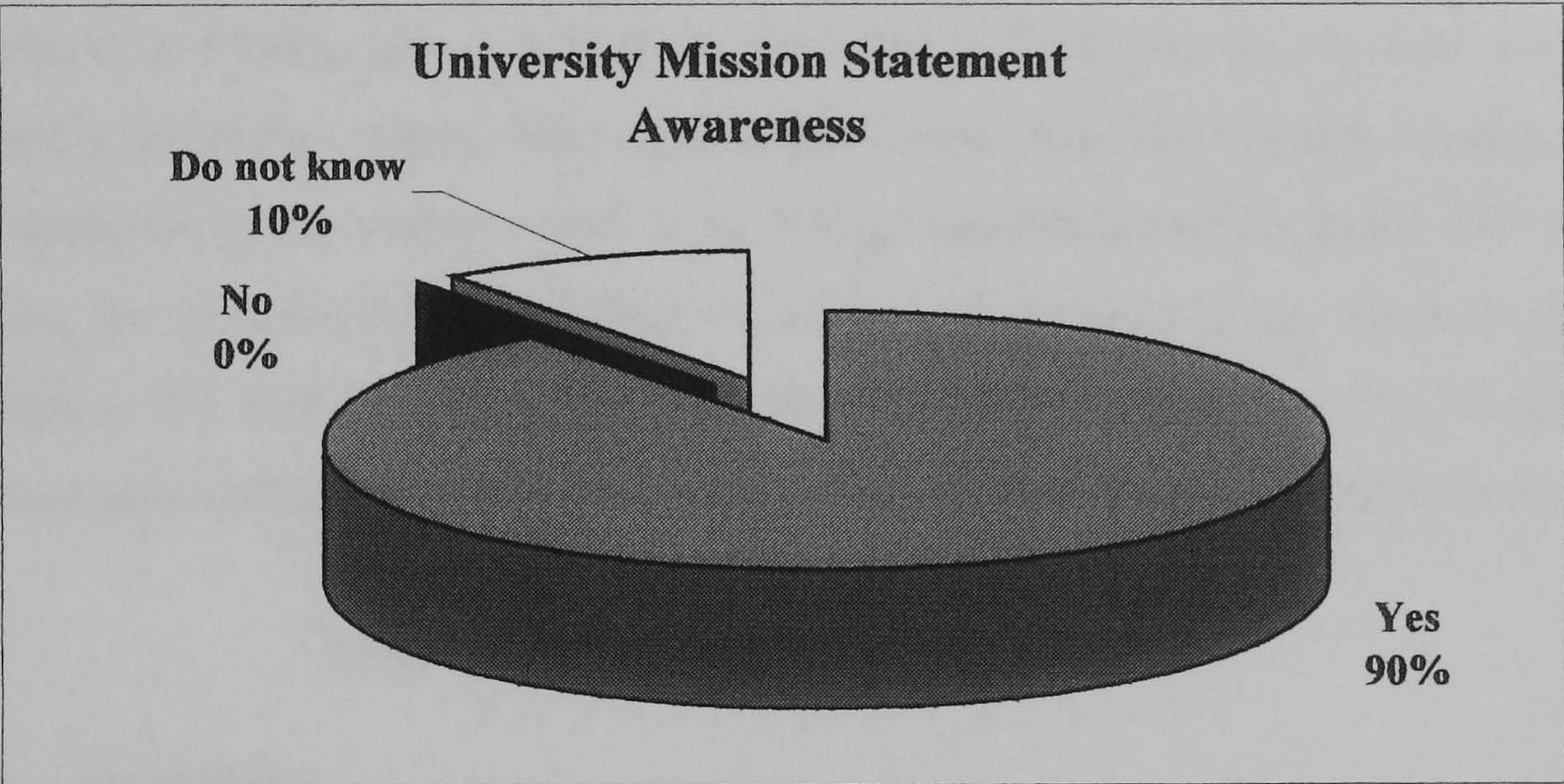
'What does the case study university's organisation structure and culture look like?'

The data collected from interview and questionnaire is analysed as follows.

7.2.1.1 Mission Statement of the University and the Faculty

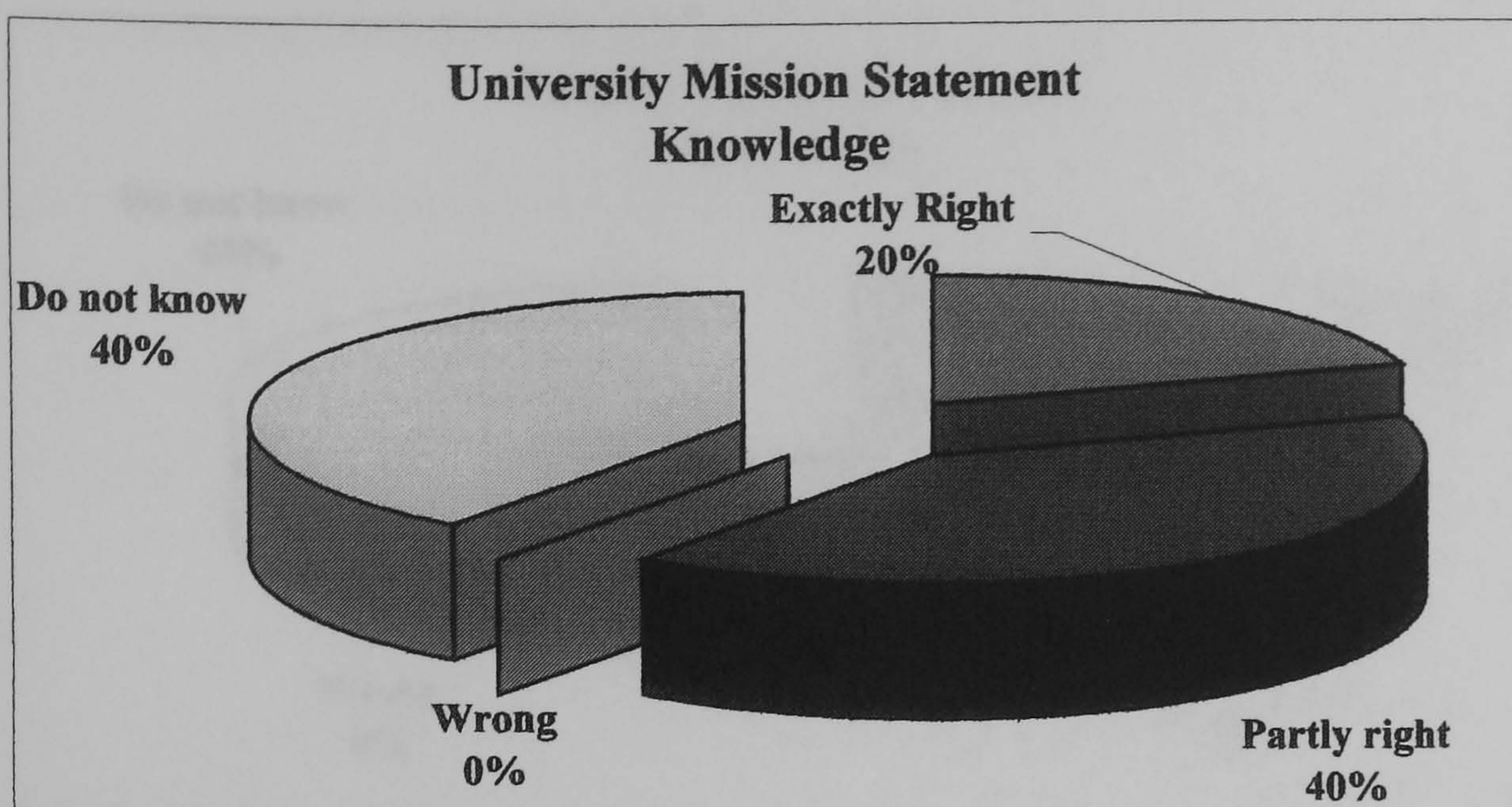
Data analyses from interview

Nine interviewees claim that they know that a mission statement exists in the University. However only two of them can express it exactly and four interviewees can express it partly correctly. Four interviewees know that the University mission statement exists but fail to express what it is. The only person, who does not know that the University has mission statement, is a postgraduate student. This is not surprising as most postgraduate students in the University study part time so the connection with the University is not as close as the University staff or full time undergraduate students. Figure 7.7 and 7.8 illustrate the percentage of the awareness of the University mission statement, and the knowledge of the University mission statement respectively.



**Total number of interviewees is 10*

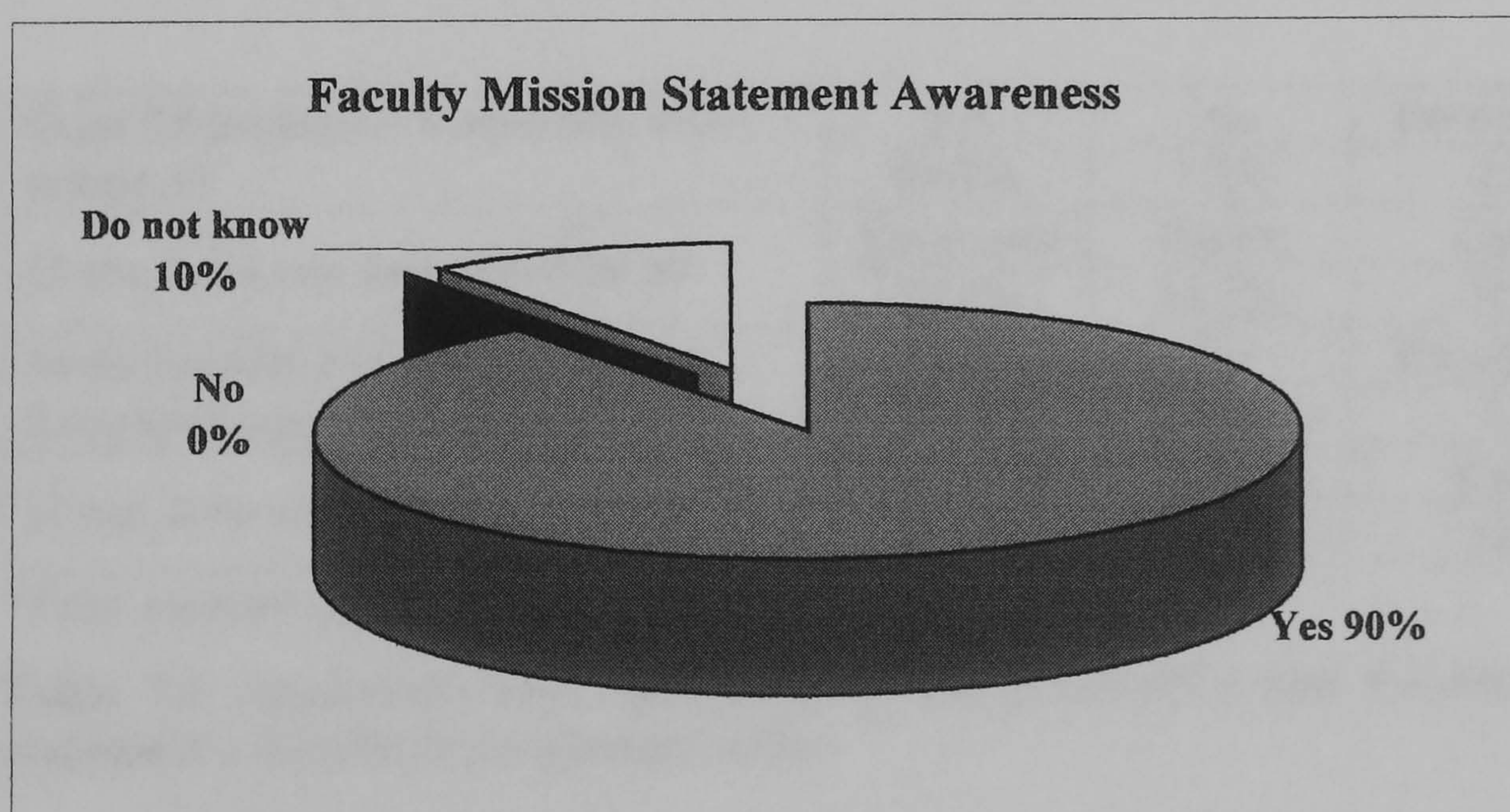
Figure 7.7 Awareness of the University mission statement – results from interview



**Total number of interviewees is 10*

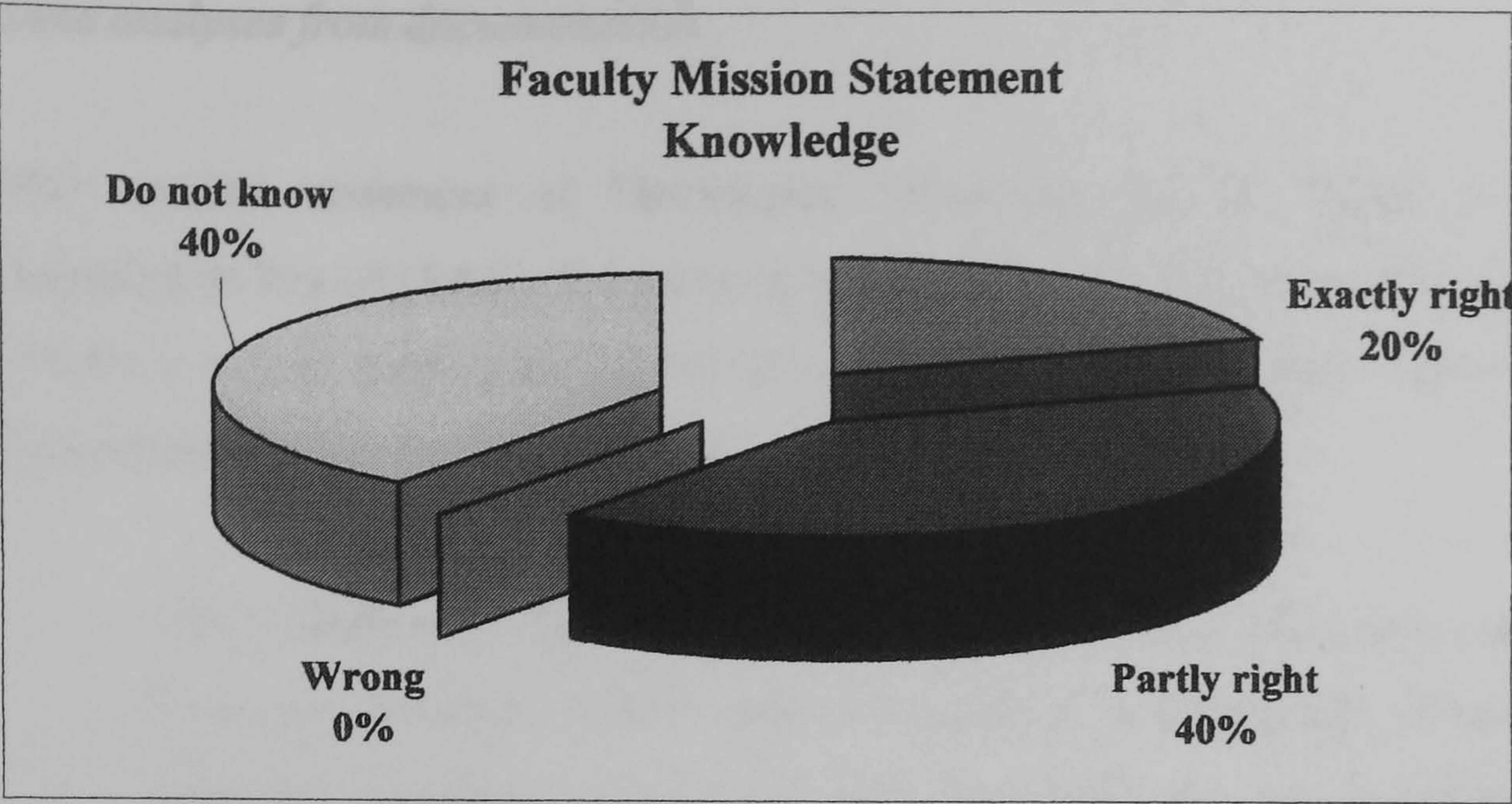
Figure 7.8 Knowledge of the University mission statement – results from interview

For knowledge of the Faculty mission, the results are very similar to those of the University. Nine interviewees claim that they know that the Faculty mission statement exists, only two of them can express it accurately, and four can express it partly correctly. Again, four interviewees know that the Faculty mission statement exists but fail to express what it is. The postgraduate student again fails to indicate that the Faculty mission statement exists. The reason is the same as previously. Figure 7.9 and 7.10 show the percentage of the awareness of the Faculty mission statement and the knowledge of the Faculty mission statement respectively.



**Total number of interviewees is 10*

Figure 7.9 Awareness of the Faculty mission statement – results from interview



**Total number of interviewees is 10*

Figure 7.10 Knowledge of the Faculty mission statement – results from interview

Data analyses from questionnaire

89.7% of respondents recognise the existence of the mission statement of Thammasat University. However only 20.5% can explain it in detail and 64.1% can only partly describe it. These results are also similar to that of the Faculty of Commerce and Accountancy, where as high as 87.2% of respondents know that Faculty has a mission but only 20.5% can explain it accurately. Table 7.6 shows the awareness and knowledge of the University and Faculty mission statement.

Does Thammasat University have mission?	Yes	No	Do not know
	89.7%	7.7%	2.6%
If yes, how can you describe it?	Very well	Partly	Cannot
	20.5%	64.1%	10.3%
Does Faculty of Commerce and Accountancy have mission?	Yes	No	Do not know
	87.2%	5.1%	7.7%
If yes, how can you describe it?	Very well	Partly	Cannot
	20.5%	61.5%	12.8%

**Total number of respondents is 39*

Table 7.6 Awareness and knowledge of the University and Faculty mission statement – results from questionnaire

Data analyses from documentation

The mission statement of Thammasat University can be found in the Self Assessment Report (SAR). It surprisingly cannot be found in the University website, which is where most other universities publish it. The mission statement of the Thammasat University is as follows;

The Thammasat University is a high-level public academic and research institute, which aims to develop high quality human resource, academic excellence, and knowledge in social science, science and technology, health science, and modern subjects to the international level. It strives to apply and relate these subjects to the development of quality of life of people in the country in the rapid change in globalisation and still remain the uniqueness of Thai characters and 'Thammasat spirit' that supports the freedom, fairness, moral, ethics, environment conservation, and preservation of art and culture. Thammasat University also aims to put together the teaching, research, and academic service in order to solve the problems, lead society, and develop democracy. The University mission stresses the importance of human resource development, quality, academic equality, development of structure and administrative system, and the search of equipments and place that supports the academic environment and quality of life of students, staff, including the performance measurement and control.

In summary, the missions of the Thammasat University are

- To be a high-level public academic and research institute
- To develop a high quality human resource with academic excellence
- To apply knowledge to develop quality of life of people in the country
- To support the freedom, fairness, moral, ethics, environment conservation, and preservation of art and culture

The mission statement of the Faculty of Commerce and Accountancy cannot be found in either the Faculty annual report, or any other publications, or even in the website. However it can be found in the obligating Self Assessment Report (SAR) to the University. The mission statement for the Faculty of Commerce and Accountancy is as follows.

The Faculty of Commerce and Accountancy is an academic institution that produces bachelor, master, and doctoral graduates who possess quality, capability, moral, professional ethics, and social responsibilities. Faculty strives to be recognised by organisations and domestic and international academic institutions as a well-known business-related academic institution, a leading institution in the country, and a institution that produces academic results and researches and also provides service related to business administration to society, which is widely recognised domestically and internationally.

In summary, the missions of the Faculty of Commerce and Accountancy are

- To produce graduates who are of high quality, having high capability, and following high professional ethics, moral, and social responsibilities.
- To be recognised as a well-known business-related academic institution
- To deliver academic services and research to the society

Data analyses from observation

Mission statements of both Faculty and University are not widely known in the organisation. Based on observation, academic staff rarely mention the mission statement. It cannot be found easily in the Faculty and University. It is also very long. As a result, very few people can explain the contents of the mission statements for both the University and the Faculty correctly.

However the mission statement is the centre of attention when there is an election in the organisation. The Faculty mission is often included in every candidate's proposed policies when there is an election of the Dean for example. However prepared mission statements are often very similar to the existing version.

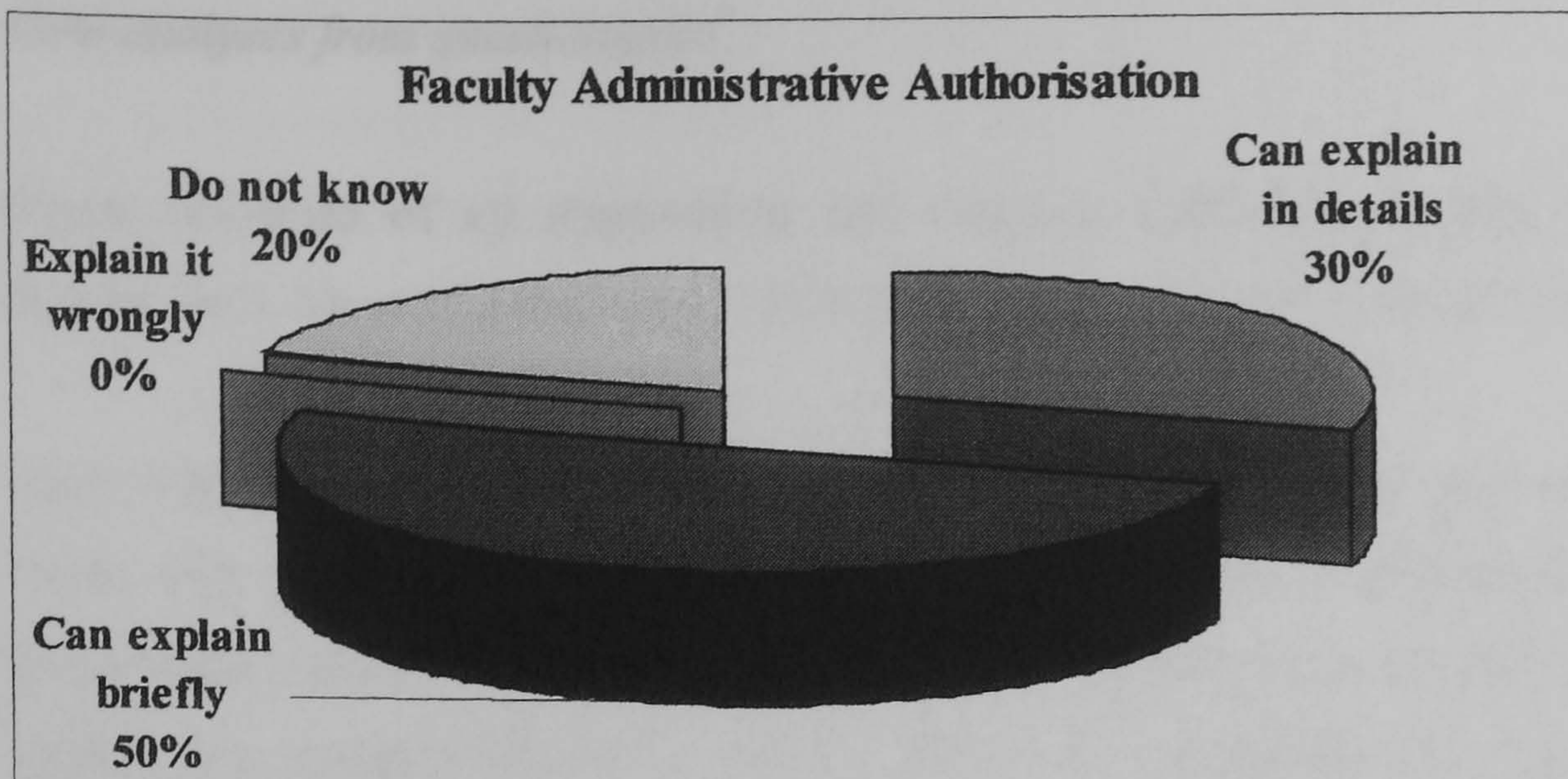
Conclusion

The results from data analyses from interviews, questionnaires, and observation are converged in the way that most of the staff in the Faculty know that the University and the Faculty mission statements exist. However few of them can express it correctly. This is due to the fact that the mission statement is very long and consists of many abstract words such as academic excellence or human resource development. It is also not separated into small parts that can be easily interpreted. The other reason of lack of knowledge of the mission statement is that the mission statement is not discussed much by management or staff except when there is an election. However these elections are held once every three years and even then most candidates do not revise the mission statement. After the election period has passed, the mission statement is ignored until the next election in three years time.

7.2.1.2 The University administrative authorisation and budgeting system

Data analyses from interview

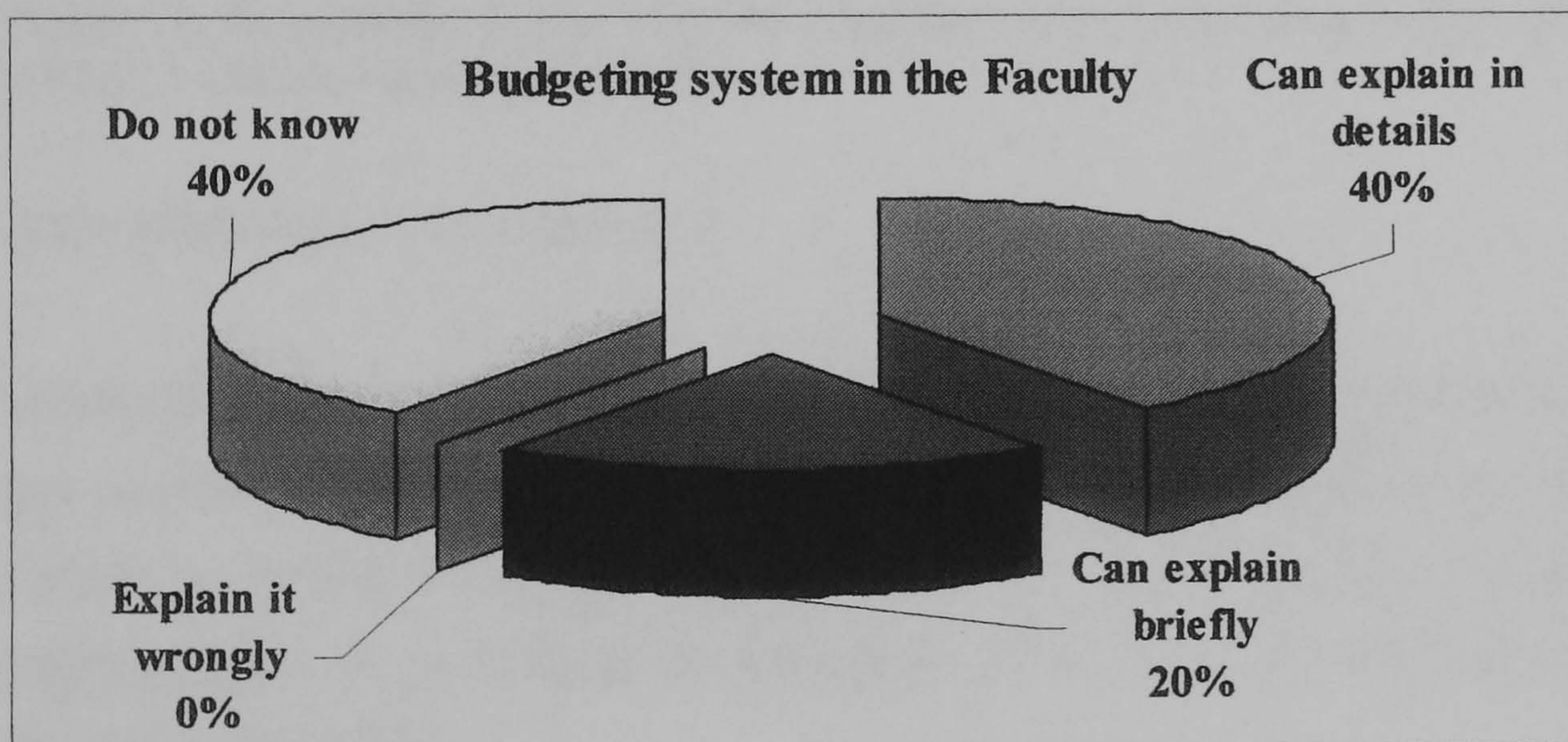
Eight interviewees can explain how administrative authorisation works in the Faculty. Three of them can explain it in details as they once worked in management positions. Nobody misunderstands this concept, and only two interviewees do not know how it works. Not surprising these two are postgraduate student and undergraduate student. Figure 7.11 illustrates the knowledge of the interviewees regarding to the Faculty administrative authorisation.



**Total number of interviewees is 10*

Figure 7.11 Knowledge of the Faculty administrative authorisation – results from interview

Four interviewees know how the budgeting system works in the Faculty. They currently or once work at management level. However another four interviewees do not know how it works. These are the Faculty financial supporter, the postgraduate student, the undergraduate student, and one lecturer, so again this is not surprising. Figure 7.12 shows the knowledge of the Faculty's budgeting system.



**Total number of interviewees is 10*

Figure 7.12 Knowledge of the Faculty's budgeting system – results from interview

Data analyses from questionnaire

About one-third of all respondents can describe authorisation level within the Faculty well. Most of respondents (53.8%), however, can partly describe it.

Most respondents (89.7%) understand how the Faculty budget approval process works very well. This result differs than that of the level of understanding of the authorisation process where only one-third of respondents understood the process clearly. It is probably due to the fact that almost all respondents have been involved in the budget approval process as members of academic projects or programmes within the Faculty, while few people are in management team, who will know the authorisation process very well. Table 7.7 illustrates the knowledge of the Faculty administrative authorisation and budgeting system.

How can you describe the authorisation level in the Faculty?	Very well	Partly	Cannot
	33.3%	53.8%	10.3%
How can you describe the budgeting approval process in the Faculty?	Very well	Partly	Cannot
	89.7%	7.7%	2.6%

**Total number of respondents is 39*

Table 7.7 Knowledge of the Faculty administrative authorisation and budgeting system – results from questionnaire

Data analyses from documentation

Unlike the mission statements, the University and Faculty authorisation’s structure can be easily found in annual reports and on the website. Most forms used in the Faculty are related to the budgeting system. These include departmental budgeting, expenses claim, invoice, and purchasing order forms. They are usually distributed to all staff in the Faculty.

Data analyses from observation

Everybody knows the University and Faculty structure very well. However authorisation power is not strictly as specified in the structure. Officially the Head of Department is at the top level in the Department and the Dean is at the top level of

the Faculty. However neither Head of Department nor the Dean can order academic staff to do anything. They are only message conveyors, i.e. Dean informs Head of Department the University's policies, and Head of Department takes that message to academic staff. Following that policy depends on the judgement of academic staff. In the case of 'regulations', some are violated and there are plenty of compromises in the organisation.

Conclusion

The results from interview, questionnaire, documentation, and observation converge. Almost all staff can explain how administrative authorisation works although not in detail. The level of knowledge of the budgeting process is even higher than that of administrative authorisation. Most staff know the budgeting process in detail. This is further confirmed by the results from documentation, in fact most of the documents used in the Faculty are related to budgeting. All staff in the Faculty know how to use budgeting form as they use them very often. Therefore it is not surprising that they know how the budgeting system works in the Faculty.

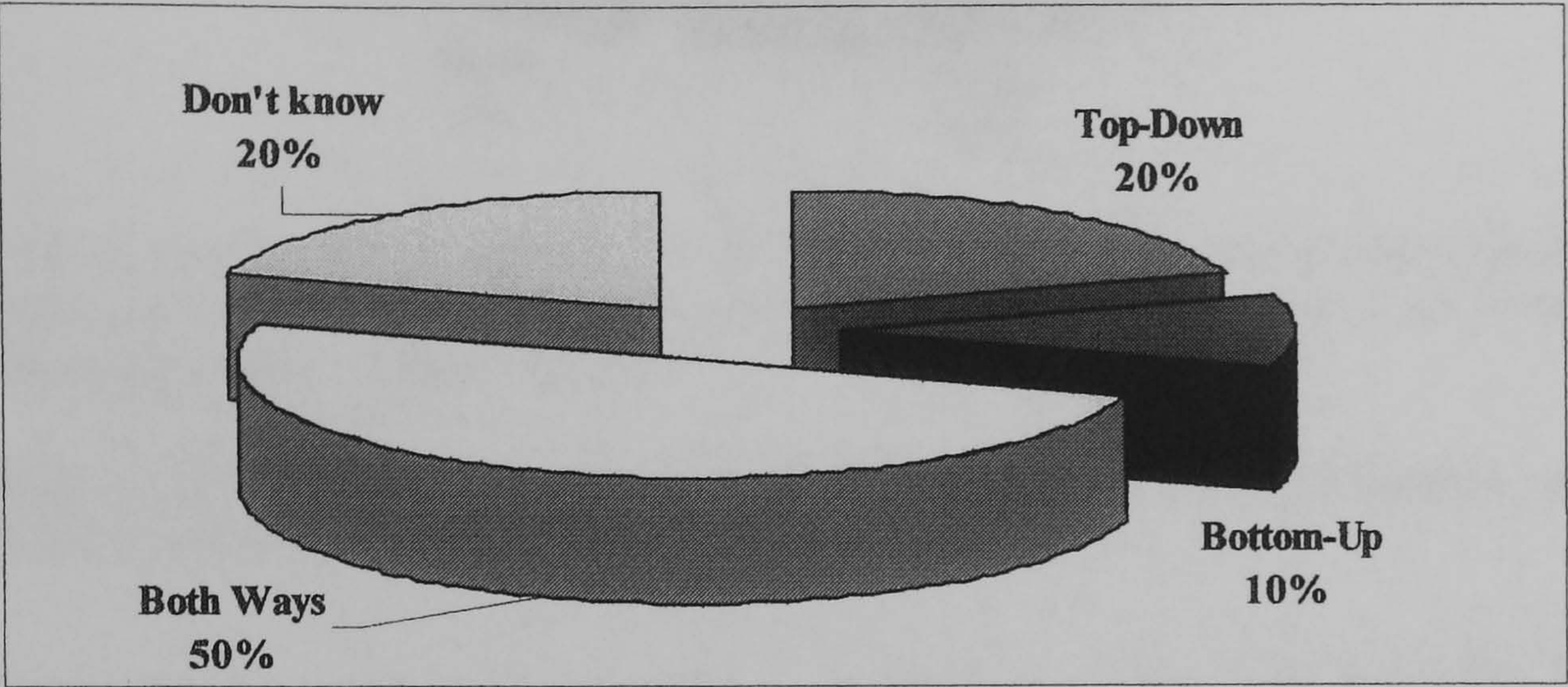
However, results from observation indicate that although most of staff know how administrative authorisation works, normal practice is not what is specified in the rules. For example, the Dean of the Faculty, who is at top of the organisation chart, cannot order staff to do anything. The role of the Dean is to convey policies, rules, and regulations, from the University Council to every staff member in the Faculty. However the Dean still has authorisation to approve or decline some requests from staff, which are normally related to the budgeting and internal working processes.

7.2.1.3 Communication within the Faculty

Data analyses from interview

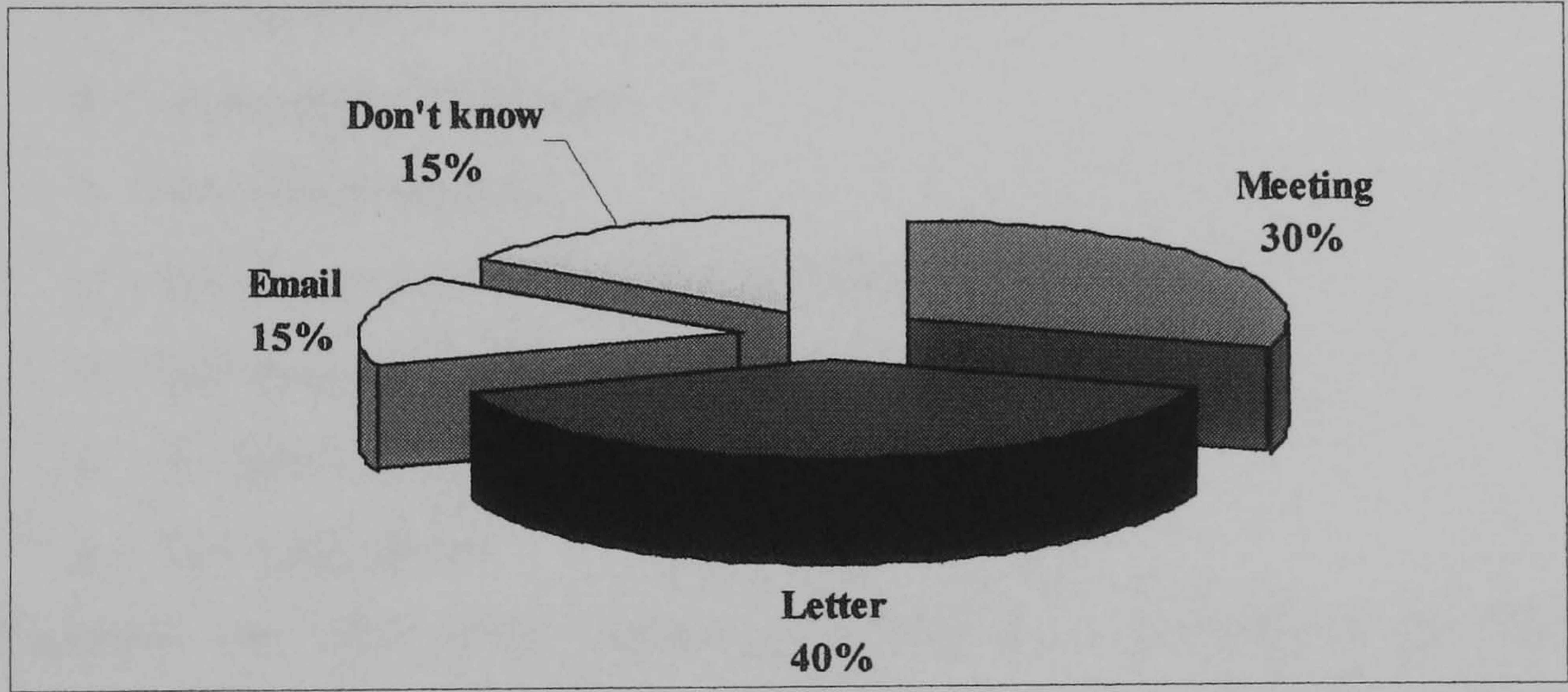
Five interviewees indicate that communication within the University is both top-down and bottom-up. For top-down communication, the channels include circulated memo or letter, meeting, and email. For bottom-up communication, there are various channels including meetings, informal conversations, circulated memos or letters,

and emails. Unfortunately senior staff have limited knowledge of email technology, so they ignore its potential as their main communication channel. Figure 7.13 shows the type of Faculty communication. Figure 7.14 shows the channels of the top-down communication and Figure 7.15 illustrates the channels of the bottom-up communication.



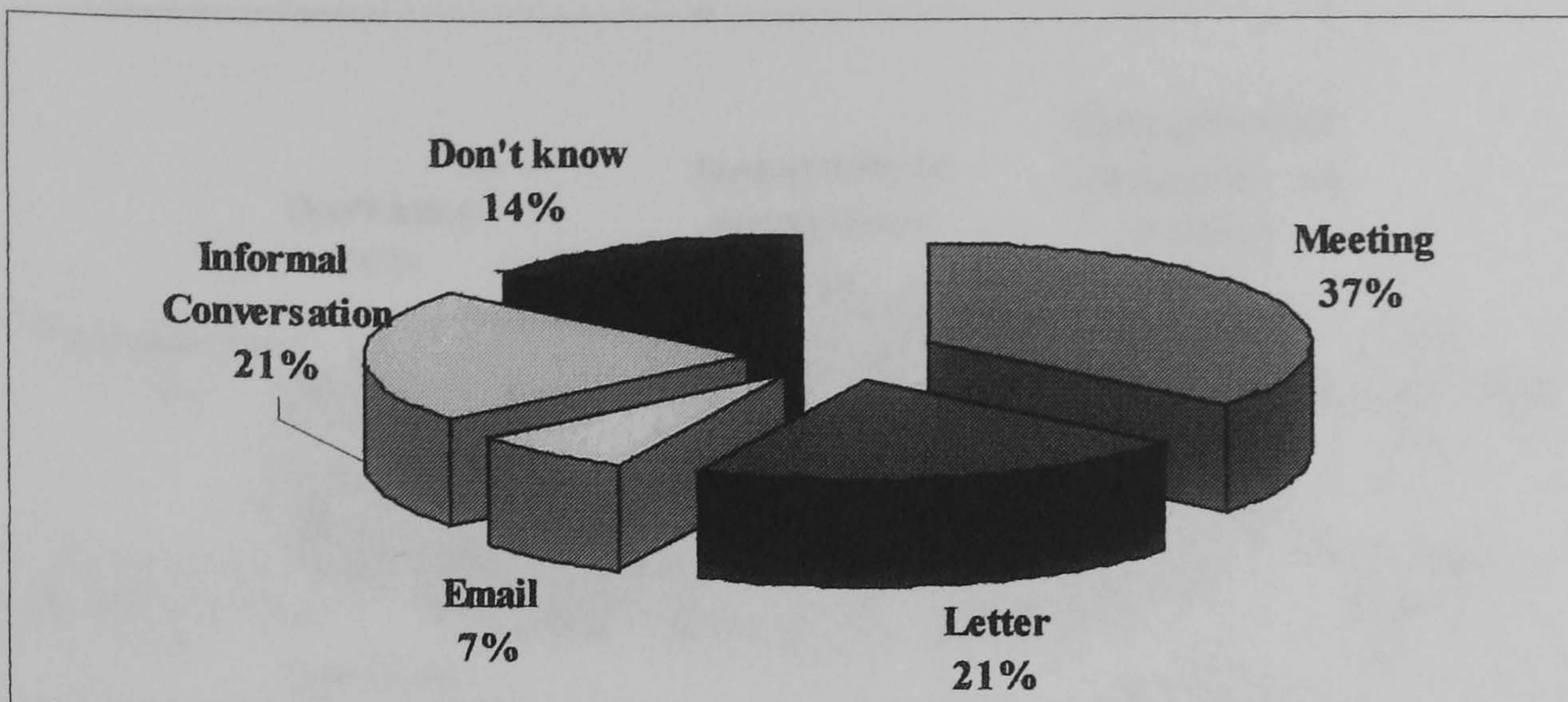
**Total number of interviewees is 10*

Figure 7.13 Type of the Faculty communication – results from interview



**Total number of interviewees is 10. However one interviewee can indicate more than one answer. The percentage shown in figure is based on the total answers not the total number of interviewees*

Figure 7.14 Channels of top-down communication within the Faculty – results from interview



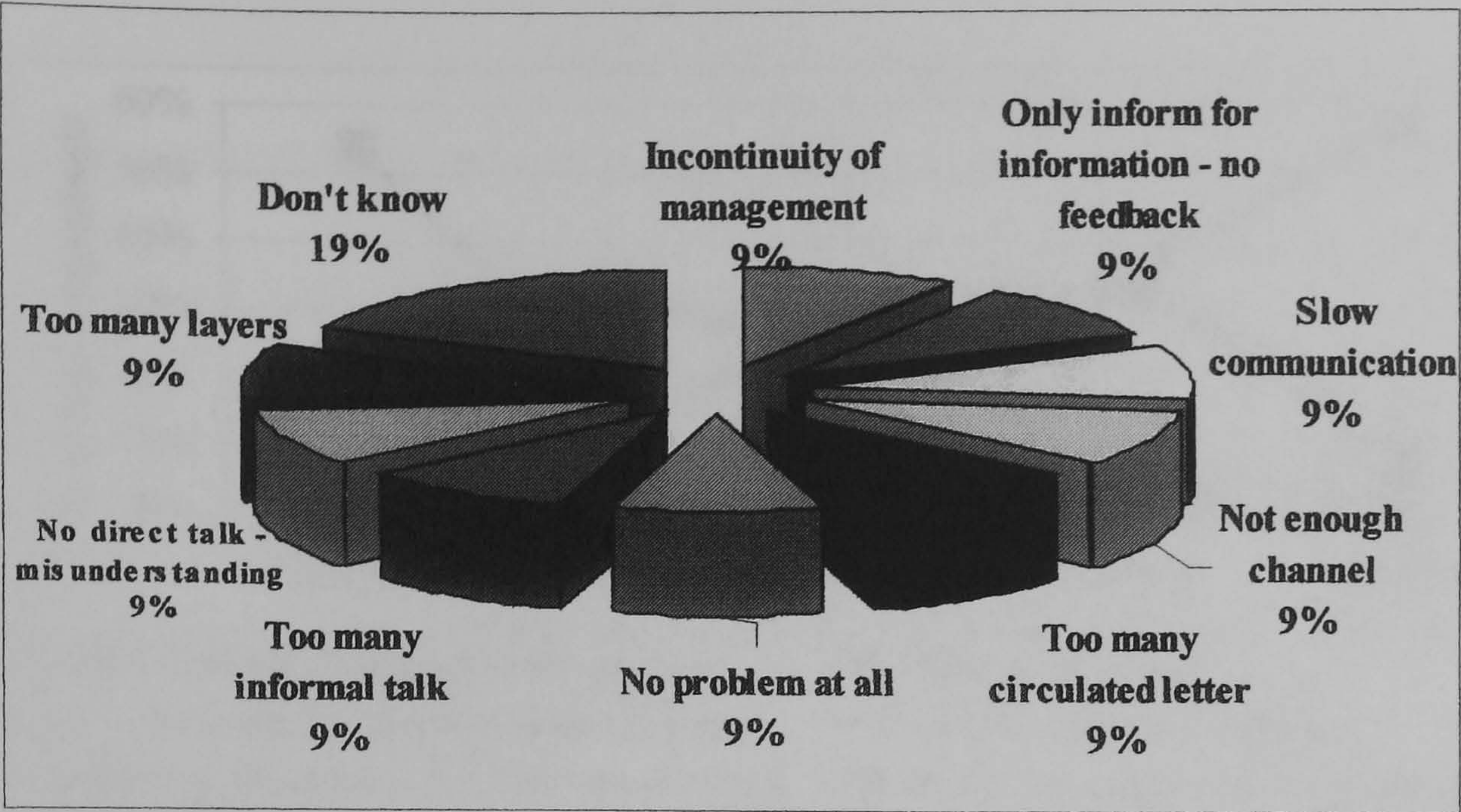
**Total number of interviewees is 10. However one interviewee can indicate more than one answer. The percentage shown in figure is based on the total answers not the total number of interviewees*

Figure 7.15 Channels of bottom-up communication within the Faculty –results from interview

Based on the results from interviews, weaknesses of the communication from the interviewees' points of view are

- Non-continuity of management
- No feedback
- Slowness of the process
- Not enough channel
- Too many circulated memo and letters
- Too many informal conversations
- No direct talk – misunderstanding
- Too many layers

However one interviewee thought that there is no problem at all. This is the perception from Faculty financial supporter. This is probably due to the fact that there is not much communication between Faculty financial supporter and other stakeholders thus financial supporter does not experience the communication problem in the Faculty. Other two interviewees did not make comment. Figure 7.16 shows the distribution of the problems of communication within the Faculty.



**Total number of interviewees is 10. However one interviewee can indicate more than one answer. The percentage shown in figure is based on the total answers not the total number of interviewees*

Figure 7.16 Communication weaknesses within the Faculty – results from interview

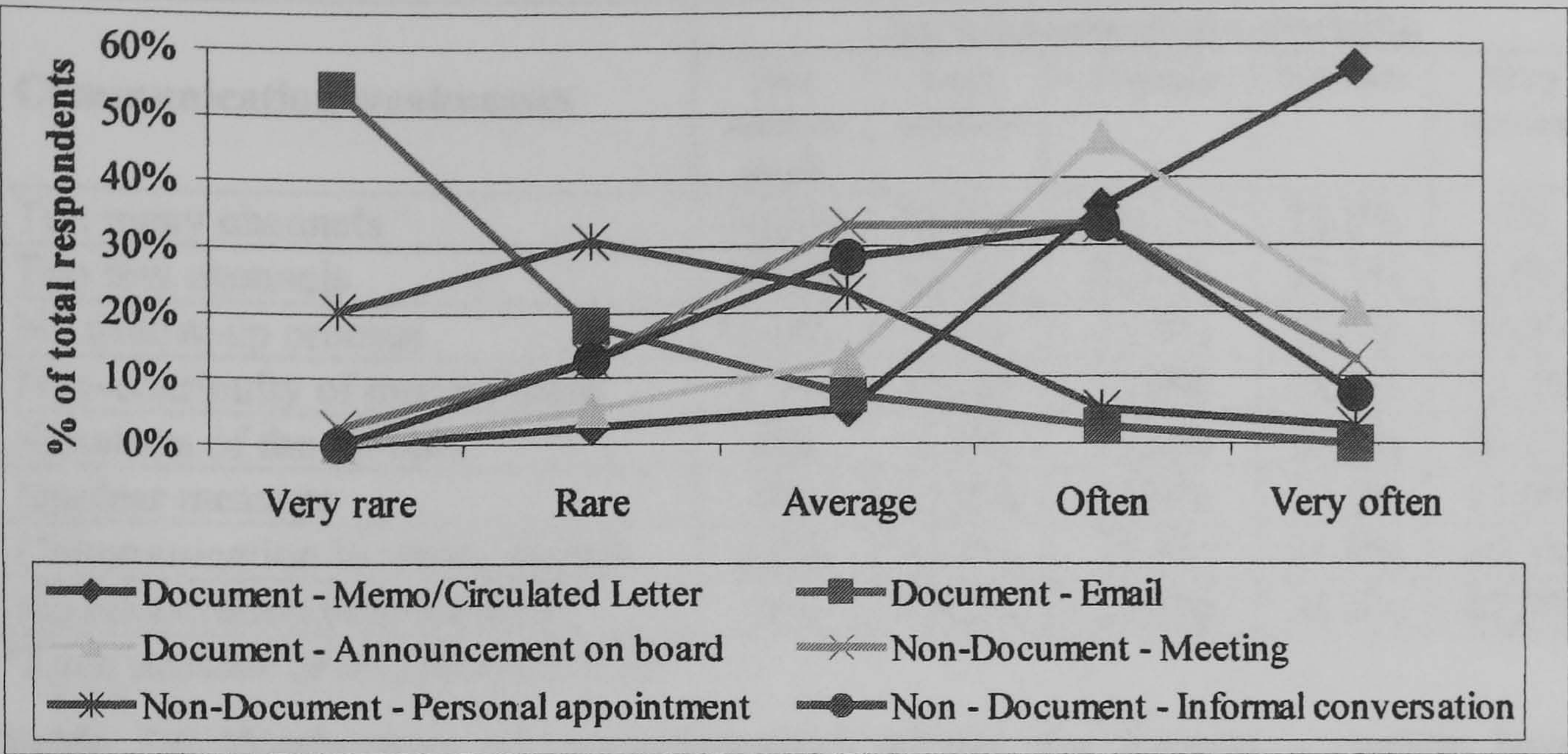
Data analyses from questionnaire

According to 87.2% of respondents, communication within the University and the Faculty is in both top-down and bottom-up. For top-down communication, channels frequently used include memo or circulated letter, meeting, and conventional notice boards. Personal appointments and email are rarely used. For bottom-up communication, where staff can provide feedback, communication channels frequently used are memo or circulated letter, informal conversation, personal appointment, and meeting. Email and conventional notice boards are rarely used for feedback. According to the respondents, the most serious problems are that there is no follow-up process and communication is not up to date because the communication process is too slow. Table 7.8 presents the communication process within the Faculty. Figure 7.17 and 7.18 show the top-down and bottom-up channels and Table 7.9 shows the weaknesses of communication within the Faculty.

What best describes the usual communication process in Faculty?	Top-Down	Bottom-Up	Both ways	Do not know
	7.7%	0%	87.2%	0%

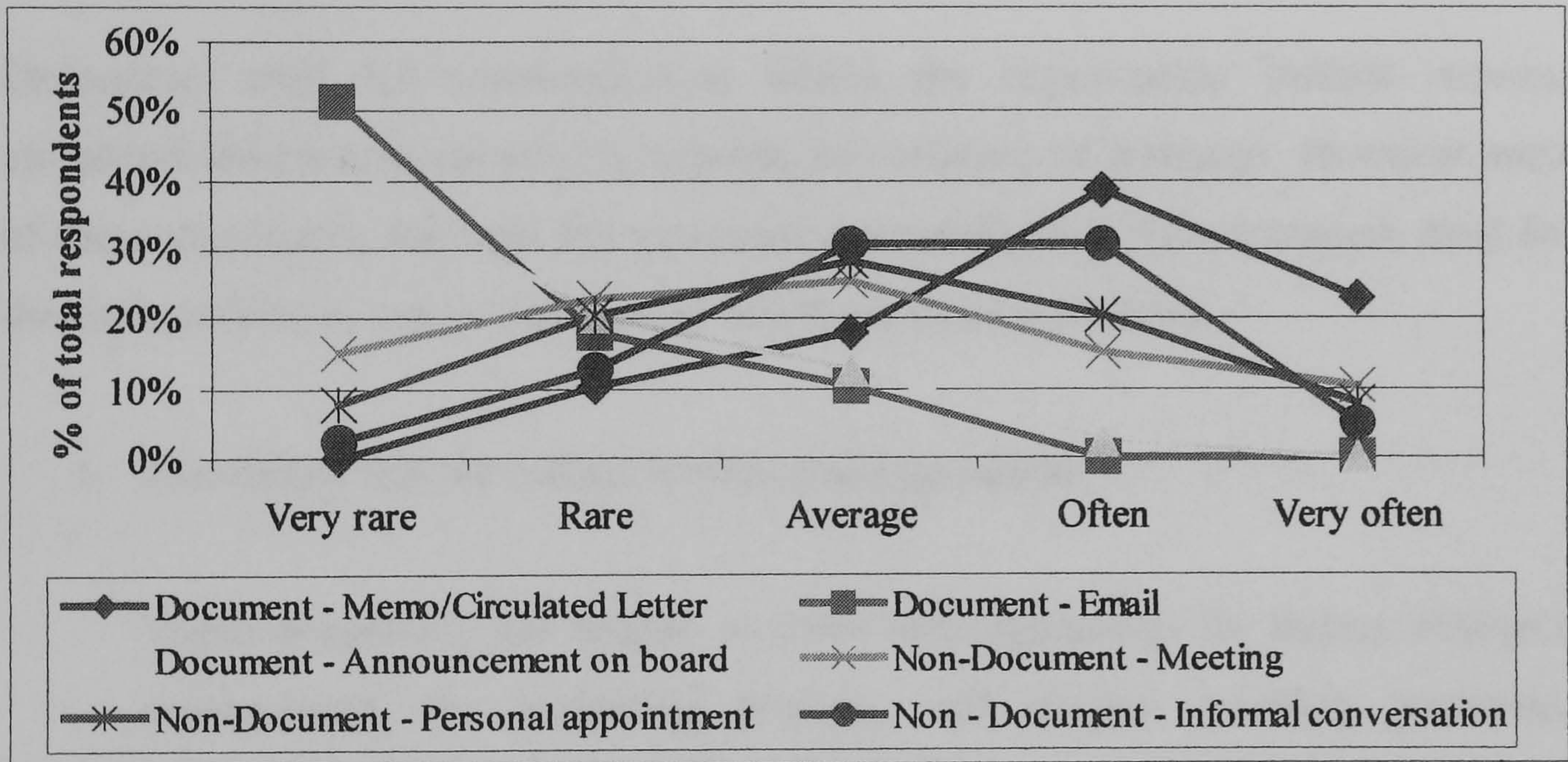
**Total number of respondents is 39*

Table 7.8 The communication process within the Faculty – results from questionnaire



**Total number of respondents is 39*

Figure 7.17 Channels of top-down communication – results from questionnaire



**Total number of respondents is 39*

Figure 7.18 Channels of bottom-up communication – results from questionnaire

Communication weaknesses	Seriousness of the problem				
	Not serious at all	Less serious	Average	Serious	Very serious
Too many channels	10.3%	33.3%	23.1%	12.8%	0%
Too few channels	10.3%	28.2%	25.6%	10.3%	2.6%
No follow-up process	2.6%	5.1%	15.4%	43.6%	17.9%
Non-continuity of management	2.6%	10.3%	12.8%	38.5%	15.4%
Slowness of the process	0%	5.1%	25.6%	23.1%	28.2%
Unclear message	0%	15.4%	25.6%	20.5%	17.9%
Communication to wrong person	2.6%	15.4%	25.6%	25.6%	10.3%
No cooperation between units	0%	10.3%	23.1%	30.8%	17.9%

**Total number of respondents is 39*

Table 7.9 Weaknesses of communication within the Faculty – results from questionnaire

Data analyses from documentation

Documents used for communication within the organisation include memos, circulated letters, announcements, reports, and minutes of meetings. However most of these documents are used for top-down communication. The document used for the communication can be categorised into three types as follows.

1. Documents that are related to rules and regulations

These documents are related to rules and regulations for human resource management, the budgeting process, and internal working processes. Examples of these documents are the staff handbook, written regulations of the budgeting approval process, and performance appraisal regulations.

2. Documents used for internal communication

These documents are mainly used as a mean for communication in the Faculty. The documents used in this regard include memo, circulated letter, and notice board items.

3. Document collected as a record

These documents are collected as a record and are used only when they are needed. Normally, they are not used very often. Examples of these documents are minutes of meeting, and formal reports.

Data analyses from observation

Communications have been observed for two months, in October and November 2003. The results of observation can be shown in Figure 7.19 and 7.20.

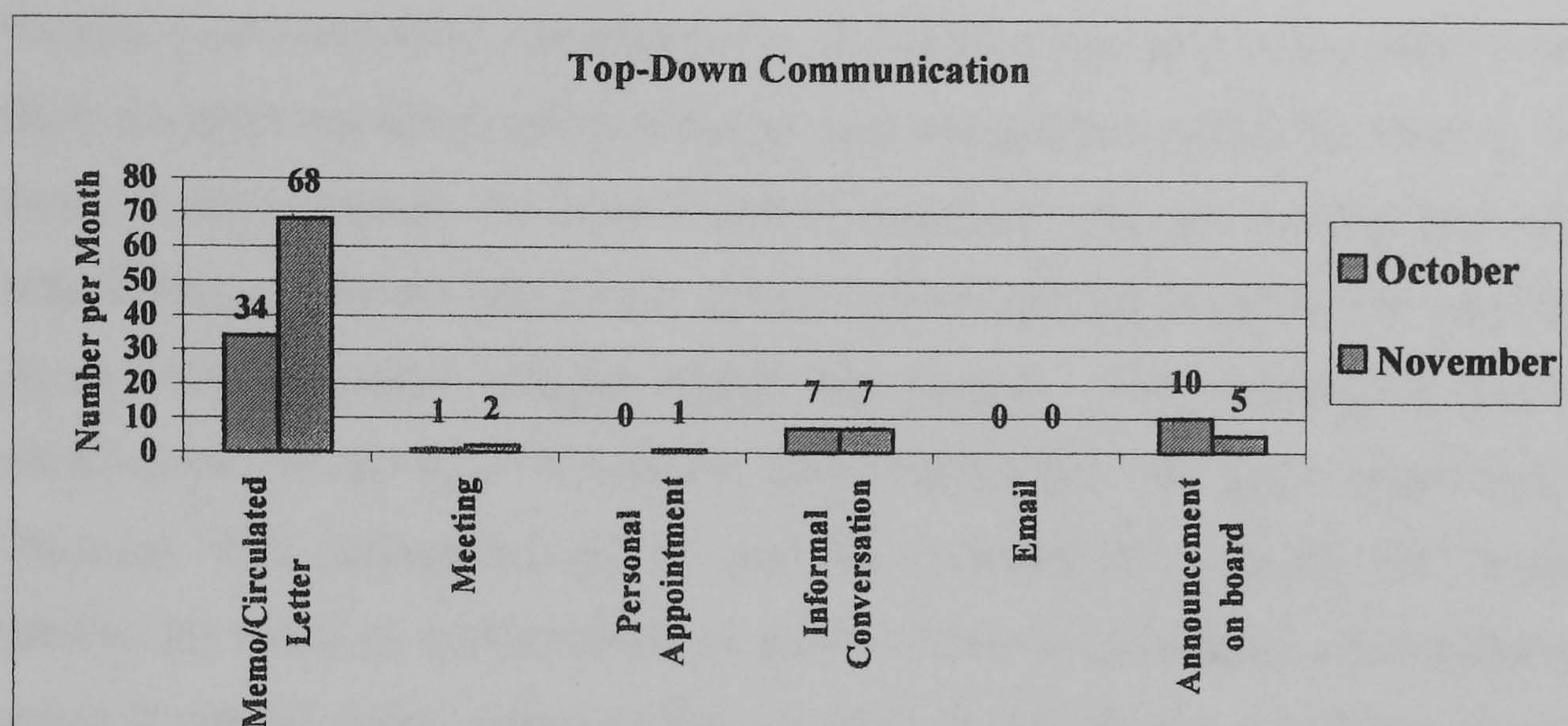


Figure 7.19 Channels of top-down communication within the Faculty – results from observation (October – November 2003)

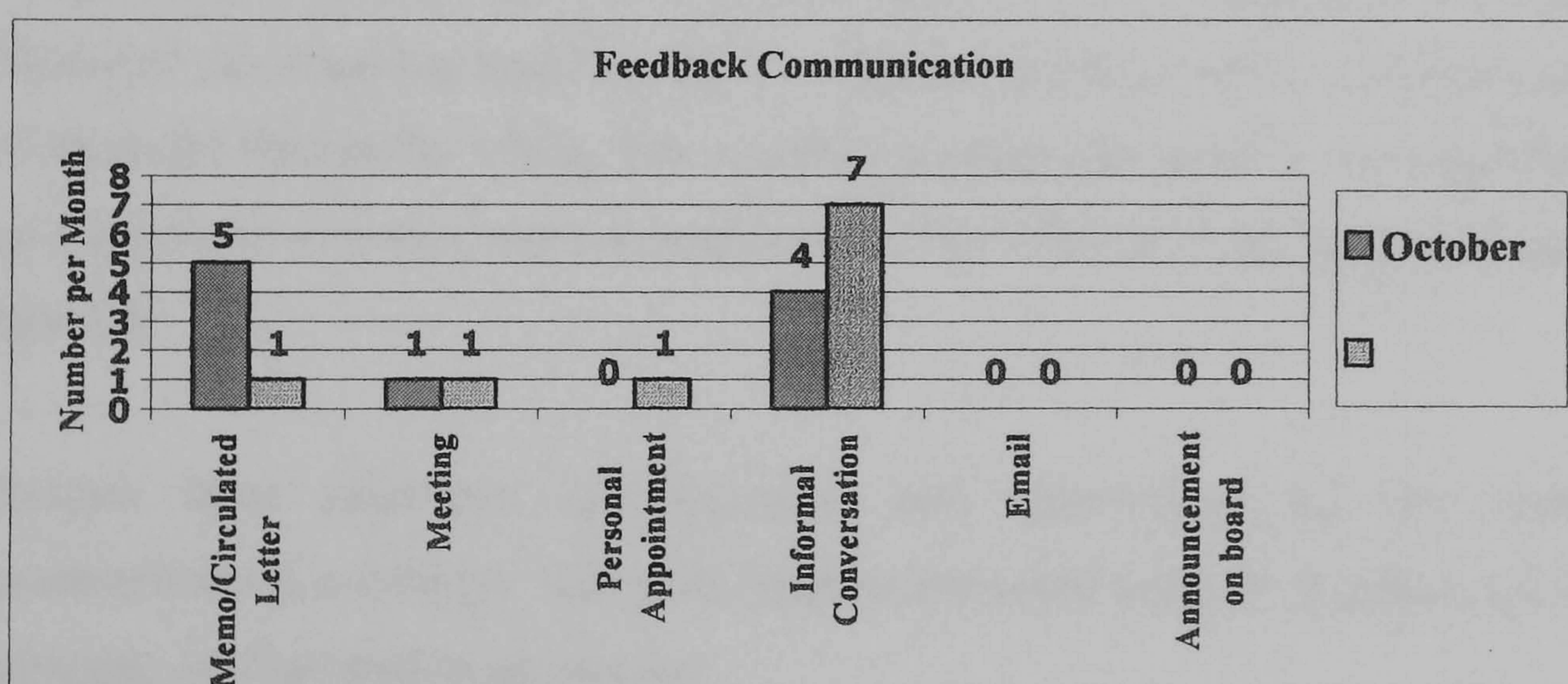


Figure 7.20 Channels of bottom-up communication within the Faculty – results from observation (October – November 2003)

The figures show that the most frequent channel used for top-down communication is memo and circulated letter, and bottom-up communication, informal conversation

is most frequently used. One interesting observation is that during the two-month period, nobody uses email as a means of the communication in the Faculty. It is surprising as there are many computers in the Faculty and every academic staff has one. This reveals that staff ability to use the computer is limited. Another possible explanation is that the computer system in the Faculty is not in very good condition, and many staff complain about the slowness of the Internet and the frequent failure of the system.

Conclusion

Results from interview, questionnaire, documentation, and observation reveal that there are both top-down and bottom-up communications within the Faculty. For top-down communication, the most frequent channels used are meeting and circulated letter/memo. However interviews specifically reveal that email is also used as a top-down communication channel within the Faculty. This contradicts results from observation, where in a two-month period there was no single email sent to the observer. The explanation can be that the interviewees who are the management always use email to communicate to limit number of colleagues and believe that the email is one of major channels that are used in the Faculty as a mean of top-down communication. Other possible explanation can be that observer (researcher) is new in the Faculty and therefore still do not receive many emails from management. However this issue has been further investigated by asking other academic staff who work in the Faculty for a long time and they confirm that email is not frequently used as a top-down or bottom-up communication. Therefore the first explanation might be possible.

Results from interview, questionnaire, and observation for the bottom-up communication converge. The most frequent channels used for feedback are memo, meeting, and informal conversation.

According to results from questionnaire, the most serious problems of communication within the Faculty are that there is no follow-up process, and that communication process within the Faculty is too slow. These problems are also mentioned by interviewees. However problems indicated by the interviewees are

more widely spread, including dis-continuity of management, no feedback channels, not enough channels, and also too many documents.

7.2.1.4 The control system within the University

Data analyses from interviews

Most interviewees say that there are both written and unwritten instructions delivered in the Faculty. Mostly financial regulations are in form of written instructions. In order to identify the control system within the University, interviewees were asked to explain the process of academic changes, both changes related to the external organisation, and changes internally.

From interviewees' points of view, academic changes, such as curriculum changes, are usually initiated by lecturers (bottom up) and by the University (top down). There is a little input from outside at the beginning. In the process, committee of the curriculum development are established and provide advice if necessary. Opinions from experts, alumni, and employer are also gathered during the development process. Finally, if it is a major change, Board of the University will approve the changes.

Changes related to external organisation such as a consulting work are usually initiated by two parties. The first party is the internal unit that is established for consulting work with external organisations, the Thammasat University Research and Consultancy Institute (TU-RAC). A typical second party, who may also initiate the changes, is a lecturer. During the process of changes, both TU-RAC and lecturers also provide advice. Five interviewees do not know who can approve changes. two believe that TU-RAC has authorisation to approve the changes, while another two believe that it is the Dean's duty.

For changes internal to the Faculty, three interviewees indicate that lecturer is the initiator. The process of changes is normally advised by related committee and is finally approved within the Faculty.

Data analyses from questionnaire

Most of respondents (64.1%) say that within the Faculty control system, there are both written and unwritten rules. For academic changes, according to 33.3% of respondents, a department usually drives the changes. 26.3% of respondents indicate that, during the changes, external experts often provide consultation, and finally 40.0% of the respondents believe that the University authorises these changes. Most respondents (43.5%) indicate that lecturer drives the changes related to the academic service for external entity and 33.9% indicate that lecturer also provides consultation, if needed. According to 44.2% of respondents, these changes are approved by the Faculty. Most of respondents (42.6%) indicate that management staff usually drive the changes related to internal process within the Faculty. However, 20.9% of total opinions indicate that committees are set up for specific tasks and these are responsible for driving during the changes. Finally most respondents (45.5%) identify that these changes are approved within the Faculty. Table 7.10 shows the formats of the control system in the University. The initiators, consultants, and parties that have the authorisation to approve the changes are presented in Table 7.11, 7.12, and 7.13 for academic changes, changes related to academic service to external entities, and internal process changes respectively.

How is the control system in the University?	Written rule	Unwritten rule	Both formats	Do not know
	30.8%	5.1%	64.1%	0%

**Total number of respondents is 39*

Table 7.10 The formats of the control system in the University

Related party/Role	Initiator	Consultant	Approval unit
Lecturer	25.0%	18.2%	
Student	-	5.1%	
Department	33.3%	15.2%	5.0%
Faculty	-		7.5%
University	15.3%	3.0%	40.0%
Ministry of Education	-		32.5%
Employer	2.8%	8.1%	
Management	20.8%	11.1%	
External experts	1.4%	26.3%	
Related committee	-	13.1%	
Other	-		5.0%
Do not know	1.4%		10.0%

**Total number of respondents is 39. However the percentage shown in figure is based on the total answers not the total number of respondents*

Table 7.11 The change initiators, consultants, and units that have authorisation to approve the academic changes

Related party/Role	Initiator	Consultant	Approval unit
Lecturer	43.5%	33.9%	11.6%
Department	19.4%	10.2%	9.3%
Faculty	-	-	44.2%
Management	16.1%	8.5%	-
External experts	-	20.3%	-
Other related unit	11.3%	10.2%	20.9%
Do not know	9.7%	16.9%	14.0%

**Total number of respondents is 39. However the percentage shown in figure is based on the total answers not the total number of respondents*

Table 7.12 The change initiators, consultants, and units that have authorisation to approve the changes of the academic service to external entities

Related party/Role	Initiator	Consultant	Approval unit
Lecturer	25.0%	16.3%	-
Student	1.5%	1.2%	-
Department	14.7%	12.8%	6.8%
Faculty	-	-	45.5%
University	8.8%	10.5%	22.7%
Ministry of Education	-	-	4.5%
Administrative staff	2.9%	3.5%	-
Management	42.6%	15.1%	-
External experts	-	15.1%	-
Related committee	-	20.9%	-
Other related unit	-	-	13.6%
Do not know	4.4%	4.7%	6.8%

**Total number of respondents is 39. However the percentage shown in figure is based on the total answers not the total number of respondents*

Table 7.13 The change initiators, consultants, and units that have authorisation to approve the changes of internal process within the Faculty

Data analyses from documentation

There are a number of documents related to the control system within the organisation. As also previously indicated, documents are related to rules and regulations in human resource management, in the budgeting process, and in the internal working processes. Examples of these documents are the staff handbook, regulations of the budgeting approval process, and performance appraisal regulations.

The quality documentation is another example used in the control system, and the Self Assessment Report (SAR) is an important quality assurance document. The Faculty is required to prepare this annually before staff from the University and related government agencies come to audit. It is therefore served as a tool to control quality in the Faculty.

Other documents that are also used as control tools in the Faculty are the course and lecturer appraisal forms, completed by students. The result of the appraisal for each course is submitted to each lecturer who has delivered that course. The score is also considered an important factor when evaluating the performance of each lecturer.

At the time of this study, there is no systematic feedback from other stakeholders such as employers, alumni, or financial supporters. Nevertheless there are institutional research exercises to investigate opinions from some stakeholders, for example employers, although the research is conducted infrequent, and the results are not used for control in the Faculty.

Data analyses from observation

Based on observation, there are both written and unwritten rules. Written rules often relate to financial matters, while unwritten rules often relate to working procedures. During the period of the study three types of change, academic changes, changes related to external entities, and changes related to internal process within the Faculty were observed.

Significant academic change, such as curriculum change is initiated by the University. The Faculty establishes a committee to control and facilitate the change.

This committee asks the Department to develop the new curriculum. The Department then arranges a seminar and every academic staff member then helps to develop it taking into consideration inputs from external experts and students. The output of the seminar is a draft of new curriculum, which is then discussed and reviewed by the committee before submitting it to the Faculty's management committee for first approval. The new curriculum is then submitted for University Council approval, before finally submitting it to the Ministry of Education for final approval.

There are two channels for changes related to external entities, i.e. the consulting works, the formal channel and the informal channel. The formal channel is used when a company or organisation approaches the Faculty or the University formally. The Faculty circulates letters to academic staff who might be interested in the work. All contact must go through the Faculty or the University, and there is one unit in the University that acts as a gateway for outside organisations. This is called the Thammasat University Research and Consultancy Institute (TU-RAC). The second, informal, channel is used when each individual academic staff contact organisation without informing the University or Faculty or when external bodies contact a university staff member directly. From personal observation, the second channel is preferred to the first channel among academic staff as they receive full fees with no reduction of an administrative fee for the University or the Faculty. This consulting work is finally approved by the external entities that pay for consulting fees.

Changes related to internal process within the organisation are often initiated by management and academic staff and approved within Faculty.

Conclusion

The results from four sources of evidences: interview, questionnaire, documentation, and observation, concur. There are both written and unwritten rules and regulations in the University depending on their types. Examples of written rules or regulations are financial and budgetary procedures and the quality assurance system in the Faculty. The process of academic changes, changes related to academic service to external organisations, and changes related to internal process within the Faculty can be concluded and shown in Figure 7.21, 7.22, and 7.23 respectively.

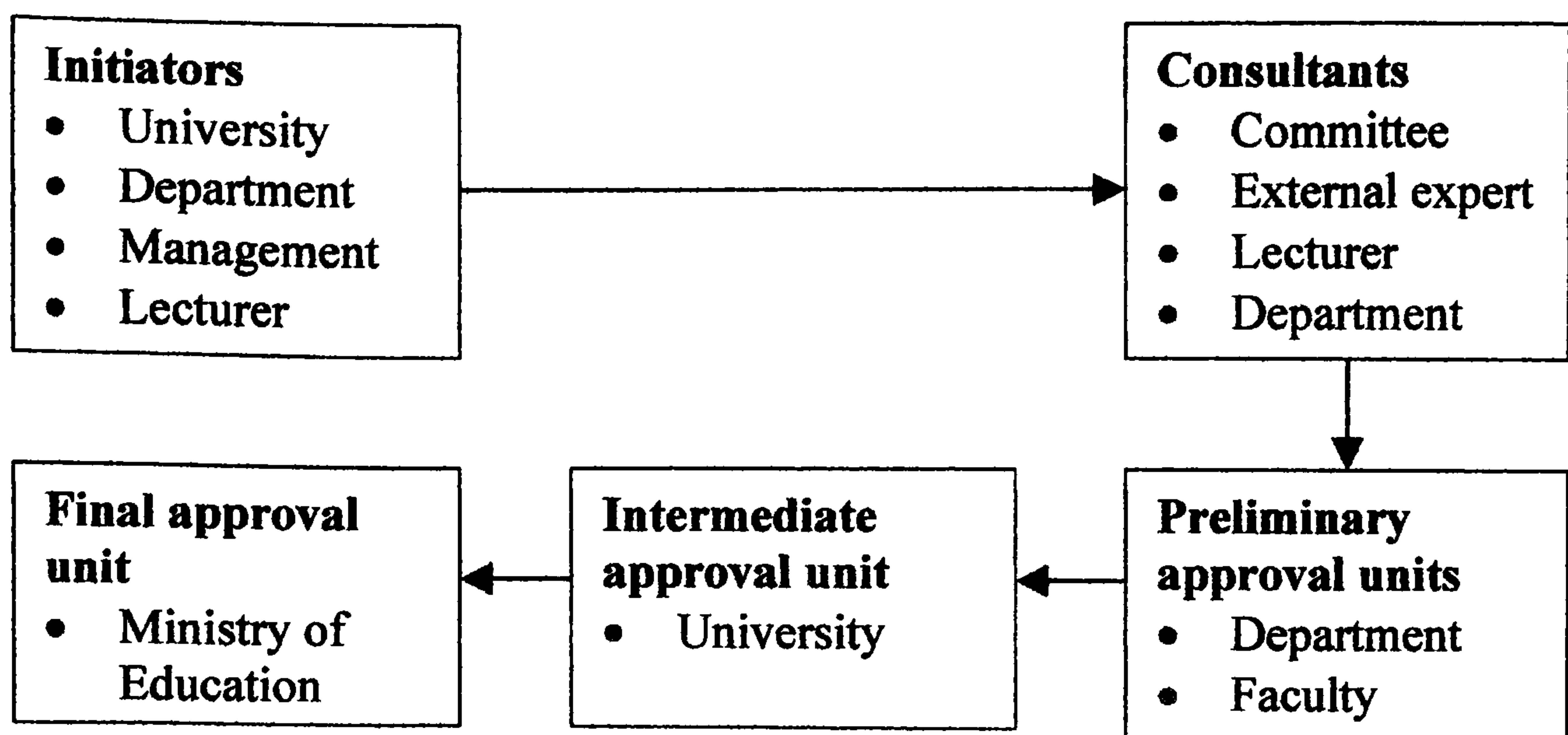


Figure 7.21 Process of the academic changes (curriculum changes)

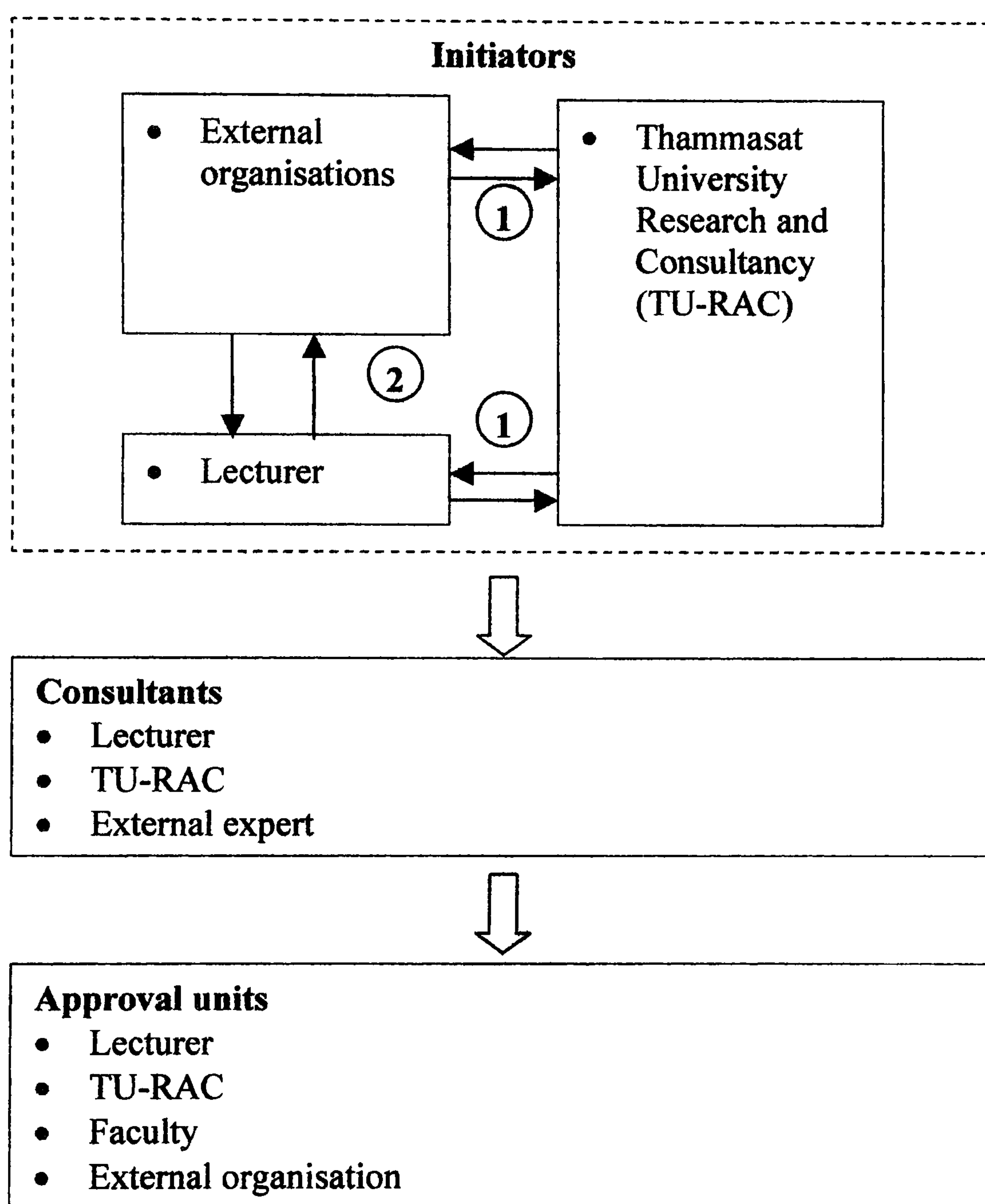


Figure 7.22 Process of changes related to academic service to external organisations

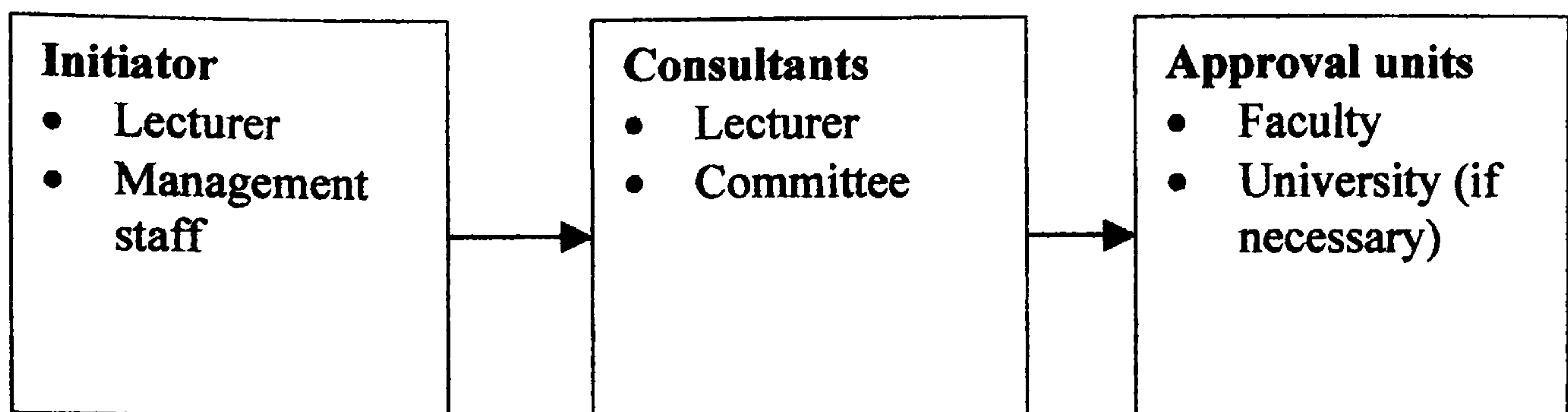


Figure 7.23 Process of changes related to internal process within the University or Faculty

Conclusion of Section I: The organisation structure and culture

This section attempts to answer the first research question:

‘What does the case study university’s organisation structure and culture look like?’

Results reveal that most of the staff in the Faculty know that the mission statements exist but cannot express it correctly because of the lack of good communications. Hence mission and strategy are not translated and communicated to employees. Further investigations reveal that although there is evidence of two-way communication within the organisation, the channels are found to be ineffective.

Although most of staff are able to describe the structure of organisation well, results from observation show that in reality authorisation power is not exactly as it is officially specified. For example, the Dean of the Faculty, who is the top of the organisation chart, cannot order the academic staff to perform, his or her role is only to convey messages from the University to staff in the Faculty. This represents symptom of ‘low power distance’ based on Hofstede’s four main dimensions of the national culture (Hofstede, 1980). It also contradicts Thai national culture that has ‘high power distance’(Hofstede, 1980; Adams and Vernon, 2001). It therefore supports the idea that, in a university setting, an organisational socialisation plays more important role than the national culture (Hofstede, 1994).

In the University control system, there are both written and unwritten rules. Written rules are mostly related to the budgeting process. Unwritten rules are mostly based on historically developed practices between research networks, networks between

university and outside stakeholders and basic university functions or what Vakkuri and Meklin (2003) call ‘invisible colleges’. This forms a ‘Thai collegiate atmosphere’, which incorporates all Thai values including both vertical and horizontal perspectives as previously described in Chapter Five.

7.2.2 Section II: The existing performance measurement

This section attempts to answer the second research question:

‘What are the problems of the existing performance measurement system pertaining to the case study university?’

Supporting data is also collected from four sources of evidences: interview, questionnaire, documentation, and observation.

7.2.2.1 The measures of quality

Data analyses from interview

1. Quality of graduate

Surprisingly only four interviewees recognise that quality of graduate is measured in the Faculty. These interviewees recognised that the quality of graduates is measured in term of percentage of employment of graduate within one year, employer satisfaction, and percentage of further studying of graduate within one year. Additional measures in this category include average salary and publication from master and doctoral graduate. Detail of response of each interviewee is presented in Table 7.14

Interviewees	Recognition of the quality of graduate	If yes, what do they measure?
1. Former Associate Dean – Graduate Study and International Relations	Yes	Percentage of employment of graduate within one year, percentage of further studying of graduate within one year, employer satisfaction
2. Associate Dean – Planning Development and Technology and Former MBA director	Yes	Employer satisfaction, average salary, publication from master and doctoral graduate
3. Lecturer – Department of Accounting	No	-
4. Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	Yes	Cannot identify
5. Assistant Dean – Graduate Study and International Relations	Yes	Cannot identify
6. Programme Director and Former Associate Dean – Academic Affairs	No	-
7. Postgraduate Student – MBA	No	-
8. Undergraduate Student	No	-
9. Administrative Officer	No	-
10. University Financial Supporter	No	-

Table 7.14 Measures of quality of graduate – results from interview

2. Quality of learning

Seven interviewees know that quality of learning is measured in the Faculty, mostly by student evaluation of teaching efficiency. Other measures include number of student's activity/project per total number of student, and the examination result. Detail of response of each interviewee is presented in Table 7.15

Interviewees	Recognition of the quality of learning	If yes, what do they measure?
1. Former Associate Dean – Graduate Study and International Relations	Yes	Student evaluation of teaching efficiency, the examination result
2. Associate Dean – Planning Development and Technology and Former MBA director	Yes	Student evaluation of teaching efficiency
3. Lecturer – Department of Accounting	Yes	Student evaluation of teaching efficiency
4. Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	Yes	Student evaluation of teaching efficiency
5. Assistant Dean – Graduate Study and International Relations	Yes	Number of student's activity/project per total number of student
6. Programme Director and Former Associate Dean – Academic Affairs	Yes	Student evaluation of teaching efficiency
7. Postgraduate Student – MBA	No	-
8. Undergraduate Student	No	-
9. Administrative Officer	Yes	Cannot identify
10. University Financial Supporter	No	-

Table 7.15 Measures of quality of learning – results from interview

3. Quality of learning support

Six interviewees know that quality of learning support is measured in the Faculty. Measures include staff-student ratio, percentage of lecturer who obtains doctoral degree, computer spending per student, and operating expense per number of full time equivalent student. Some interviewees failed to identify the measures but they are confident that the Faculty provides very good learning support to student such as classroom with air condition, clean toilet, and Internet access. Detail of response of each interviewee is presented in Table 7.16

Interviewees	Recognition of the quality of learning support	If yes, what do they measure?
1. Former Associate Dean – Graduate Study and International Relations	Yes	Staff-student ratio, percentage of lecturer who obtains doctoral degree, computer spending per student
2. Associate Dean – Planning Development and Technology and Former MBA director	Yes	Computer spending per student, operating expense per number of full time equivalent student
3. Lecturer – Department of Accounting	Yes	Computer spending per student
4. Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	Yes	Computer spending per student
5. Assistant Dean – Graduate Study and International Relations	Yes	Percentage of lecturer who obtains doctoral degree, operating expense per number of full time equivalent student
6. Programme Director and Former Associate Dean – Academic Affairs	Yes	Cannot identify
7. Postgraduate Student – MBA	No	-
8. Undergraduate Student	No	-
9. Administrative Officer	No	-
10. University Financial Supporter	No	-

Table 7.16 Measures of quality of learning support – results from interview

4. Quality of research

Only five interviewees know that there are measures of research quality in place in the Faculty. These measures include number of publication or publication score per full time lecturer, research output, and research grant. Detail of response of each interviewee is presented in Table 7.17.

Interviewees	Recognition of the quality of research	If yes, what do they measure?
1. Former Associate Dean – Graduate Study and International Relations	Yes	Number of publication or publication score per full time lecturer
2. Associate Dean – Planning Development and Technology and Former MBA director	Yes	Number of publication or publication score per full time lecturer
3. Lecturer – Department of Accounting	No	-
4. Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	Yes	Research output, and research grant
5. Assistant Dean – Graduate Study and International Relations	Yes	Research output, and research grant
6. Programme Director and Former Associate Dean – Academic Affairs	Yes	Number of publication or publication score per full time lecturer
7. Postgraduate Student – MBA	No	-
8. Undergraduate Student	No	-
9. Administrative Officer	No	-
10. University Financial Supporter	No	-

Table 7.17 Measures of quality of research – results from interview

5. Quality of academic service to community

Five interviewees recognise that quality of academic service to community is measured in terms of number of activity/project for academic service to community and, the number of full time lecturer who is a member of committee in professional body. Detail of response of each interviewee is presented in Table 7.18

Interviewees	Recognition of the quality of academic service to community	If yes, what do they measure?
1. Former Associate Dean – Graduate Study and International Relations	No	-
2. Associate Dean – Planning Development and Technology and Former MBA director	Yes	The number of full time lecturer who is a member of committee in professional body
3. Lecturer – Department of Accounting	No	-
4. Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	Yes	Number of activity/project for academic service to community
5. Assistant Dean – Graduate Study and International Relations	Yes	Number of activity/project for academic service to community
6. Programme Director and Former Associate Dean – Academic Affairs	Yes	Number of activity/project for academic service to community
7. Postgraduate Student – MBA	No	-
8. Undergraduate Student	No	-
9. Administrative Officer	Yes	The number of full time lecturer who is a member of committee in professional body
10. University Financial Supporter	No	-

Table 7.18 Measures of quality of academic service to community – results from interview

6. Quality of preservation of art and culture

Only two interviewees know that there are measures in this category. Seven do not know whether it is measured or not and one interviewee specifically says that there is no measure in this category. No one can identify a measure related to preservation of art and culture. One interviewee is adamant that there should be no measure in this perspective in some faculties such as the Business School,

because it is not related to its mission. Furthermore the University should clarify the meaning of ‘preservation of art and culture’ before developing any measure related to it. Detail of response of each interviewee is presented in Table 7.19

Interviewees	Recognition of the quality of preservation of art and culture	If yes, what do they measure?
1. Former Associate Dean – Graduate Study and International Relations	No	-
2. Associate Dean – Planning Development and Technology and Former MBA director	Yes	Cannot identify
3. Lecturer – Department of Accounting	No	-
4. Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	No	-
5. Assistant Dean – Graduate Study and International Relations	Yes	Cannot identify
6. Programme Director and Former Associate Dean – Academic Affairs	No	-
7. Postgraduate Student – MBA	No	-
8. Undergraduate Student	No	-
9. Administrative Officer	No	-
10. University Financial Supporter	No	-

Table 7.19 Measures of quality of preservation of art and culture – results from interview

7. Quality of administration and management

Five interviewees recognise that quality of administration and management is measured in term of revenue, expense, and salary. One interviewee states that there is a performance report for every administrative staff member to the Faculty committee, or to the project’s committee who supervise that member. Detail of response of each interviewee is presented in Table 7.20

Interviewees	Recognition of the quality of administration and management	If yes, what do they measure?
1. Former Associate Dean – Graduate Study and International Relations	Yes	Revenue, expense
2. Associate Dean – Planning Development and Technology and Former MBA director	Yes	Revenue, expense
3. Lecturer – Department of Accounting	No	-
4. Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	Yes	Revenue, expense
5. Assistant Dean – Graduate Study and International Relations	Yes	Revenue, expense
6. Programme Director and Former Associate Dean – Academic Affairs	No	-
7. Postgraduate Student – MBA	No	-
8. Undergraduate Student	No	-
9. Administrative Officer	Yes	Revenue, expense, salary, performance report
10. University Financial Supporter	No	-

Table 7.20 Measures of quality of administration and management – results from interview

8. Quality of quality assurance system and mechanism

Five interviewees know that the quality of quality assurance system and mechanism is measured. However there are many measures in this category. Those measures are however based on the standard of quality control of the University. Many interviewees misunderstand the questions and their responses are that there is quality assurance system in the University. However when asked how the quality of the system is measured, all of the interviewees fail to respond and admit that they do not recognise any measure related to the quality assurance system. Detail of response of each interviewee is presented in Table 7.21.

Interviewees	Recognition of the quality of quality assurance system and mechanism	If yes, what do they measure?
1. Former Associate Dean – Graduate Study and International Relations	Yes	Cannot identify
2. Associate Dean – Planning Development and Technology and Former MBA director	Yes	Cannot identify
3. Lecturer – Department of Accounting	Yes	Cannot identify
4. Associate Dean – Graduate Study and International Relations and Director – International Undergraduate Programme	Yes	Cannot identify
5. Assistant Dean – Graduate Study and International Relations	Yes	Cannot identify
6. Programme Director and Former Associate Dean – Academic Affairs	No	-
7. Postgraduate Student – MBA	No	-
8. Undergraduate Student	No	-
9. Administrative Officer	No	-
10. University Financial Supporter	No	-

Table 7.21 Measures of quality of quality assurance system and mechanism – results from interview

Data analyses from questionnaire

1. Quality of graduate

Most respondents, 84.6%, know that the Faculty measures quality of graduate. They believe that the quality of graduate is often measured in term of percentage of employment of graduate within one year (79.5%), percentage of further studying of graduate within one year (64.1%) and employer satisfaction (56.4%). Table 7.22 presents the descriptive statistics of this measure.

Does your organisation measure the quality of graduates?	Yes	No	Do not know
	84.6%	7.7%	7.7%
If yes, what do you measure?	Measures		%
	Percentage of employment of graduate within 1 year		79.5%
	Percentage of further studying of graduate within 1 year		64.1%
	Employer satisfaction		56.4%
	Number of publication from master thesis per total number of master thesis		20.5%
	Number of publication from doctoral thesis per total number of doctoral thesis		17.9%
	Other		5.1%

**Total number of respondents is 39*

Table 7.22 Measures of quality of graduate – results from questionnaire

2. Quality of learning

79.5% of all respondents know that the Faculty has some measures related to this perspective. It is mostly in the form of student's opinion on lecturer's teaching efficiency (74.4%), number of credit or hour in practical learning course (51.3%), and number of elective course (35.9%). Table 7.23 summarises the descriptive statistics of this measure.

Does your organisation measure the quality of learning?	Yes	No	Do not know
	79.5%	7.7%	10.3%
If yes, what do you measure?	Measures		%
	Number of credit or hour in practical learning course		51.3%
	Number of hour in field study		12.8%
	Number of elective course		35.9%
	Number of multi-disciplinary curriculum		25.6%
	Number of course delivered via the Internet		5.1%
	Number of computer network connection		20.5%
	Number of hour for library and computer service		33.3%
	Student's opinion on lecturer's teaching efficiency		74.4%

**Total number of respondents is 39*

Table 7.23 Measures of quality of learning – results from questionnaire

If yes, what do you measure?	Measures	%
	Number of student activity/project per total number of student	20.5%
	Number of research related to learning process	23.1%
	Other	7.7%

**Total number of respondents is 39*

Table 7.23 Measures of quality of learning – results from questionnaire (continued)

3. Quality of learning support

A similar proportion (74.4%) recognises the existing of measures for quality of learning support. Respondents believe that this is measured in term of staff-student ratio (71.8%), percentage of lecturer who obtains doctoral degree (64.1%), and number of computer per number of full time equivalent student. Table 7.24 presents the descriptive statistics of this measure.

Does your organisation measure the quality of learning support?	Yes	No	Do not know
	74.4%	12.8%	12.8%
If yes, what do you measure?	Measures		%
	Staff-student ratio		71.8%
	Operating expense per number of full time equivalent student		30.8%
	Percentage of lecturer who obtains doctoral degree		64.1%
	Number of computer per number of full time equivalent student		43.6%
	Library and information technology expense per number of full time equivalent student		25.6%
	Other		5.1%

**Total number of respondents is 39*

Table 7.24 Measures of quality of learning support – results from questionnaire

4. Quality of research

As many as 79.5% of respondents know that quality of research is measured in the Faculty. Respondents believe it is measured mostly in term of number of publication per full time lecturer (76.9%), and both external and internal research grant are also recognised. Table 7.25 summarises the descriptive statistics of this measure.

Does your organisation measure the quality of research?	Yes	No	Do not know
	79.5%	5.1%	15.4%
If yes, what do you measure?	Measures		%
	Number of publication per full time lecturer		76.9%
	Number of research that can be used for other research or in teaching per full time lecturer		17.9%
	External research grant per full time lecturer		30.8%
	Internal research grant per full time lecturer		33.3%
	Other		2.6%

**Total number of respondents is 39*

Table 7.25 Measures of quality of research – results from questionnaire

5. Quality of academic service to community

61.5% of all respondents know that the Faculty measures quality of academic service to community. Assumed measures in this category number only two; the number of activity/project for academic service to community (48.7%) and, number of full time lecturer who is a member of committee in professional body (46.2%). Table 7.26 presents the descriptive statistics of this measure.

Does your organisation measure the quality of academic service to the community?	Yes	No	Do not know
	61.5%	15.4%	23.1%
If yes, what do you measure?	Measures		%
	Number of activity/project for academic service to community		48.7%
	Number of full time lecturer who is a member of committee in professional body		46.2%

**Total number of respondents is 39*

Table 7.26 Measures of quality of academic service to the community – results from questionnaire

6. Quality of preservation of art and culture

By contrast, only 20.5% of all respondents know that the Faculty measures the quality of preservation of art and culture, while as high as 38.5% indicate that there is no such measure in the Faculty and 41.0% do not know whether it is measured in the Faculty. Those who know indicate that it is measured in term of number of activity that is related to preservation of art and culture (15.4%) and number of activity that develops and establishes the standard of art and culture (7.7%). Table 7.27 summarises the descriptive statistics of this measure.

Does your organisation measure the quality of preservation of art and culture?	Yes	No	Do not know
	20.5%	38.5%	41.0%
If yes, what do you measure?	Measures		%
	Number of activity that is related to preservation of art and culture		15.4%
	Number of activity that develops and establishes the standard of art and culture		7.7%

**Total number of respondents is 39*

Table 7.27 Measures of quality of preservation of art and culture – results from questionnaire

7. Quality of administration and management

Approximately half of respondents, 51.3%, know that quality of administration and management is measured in the University. 20.5% of respondents however believe that there is no such measure and 28.2% of respondents do not know. Those who do know, 28.2%, indicate that it is measured in term of number of nonacademic staff per number of full time equivalent student (28.2%), and by percentage of staff salary per total operating expense (25.6%). Table 7.28 presents the descriptive statistics of this measure.

Does your organisation measure the quality of administration and management?	Yes	No	Do not know
	51.3%	20.5%	28.2%
If yes, what do you measure?	Measures		%
	Percentage of staff salary per total operating expense		25.6%
	Percentage of administrative staff per total operating expense		17.9%
	Number of nonacademic staff per number of full time equivalent student		28.2%
	Percentage of central administrative expense per total operating expense		17.9%
	Depreciation expense per number of full time equivalent student		5.1%
	Percentage of net profit per operating expense		7.7%
	Other		5.1%

**Total number of respondents is 39*

Table 7.28 Measures of quality of administration and management – results from questionnaire

8. Quality of quality assurance system and mechanism

66.7% of all respondents know that the University audit the quality assurance system and associated mechanisms. It is audited mostly in term of process/activity that is related to internal quality assurance (51.3%), number of unit that implements internal quality assurance (35.9%), and the internal quality

assurance budget (30.8%). Table 7.29 summarises the descriptive statistics of this measure.

Does your organisation measure the quality of quality assurance system and mechanism?	Yes	No	Do not know
	66.7%	12.8%	20.5%
If yes, what do you measure?	Measures		%
	Process/activity that is related to internal quality assurance		51.3%
	Internal quality assurance budget		30.8%
	Number of unit that implements internal quality assurance		35.9%
	Other		7.7%

**Total number of respondents is 39*

Table 7.29 Measures of quality of quality assurance system and mechanism – results from questionnaire

Data analyses from documentation

The main documentation used in this part is the Self Assessment Report (SAR) (Faculty of Commerce and Accountancy, 2003). For the year 2003, the Faculty of Commerce and Accountancy established performance measures in nine aspects according to the requirement of the Ministry of Education and the Office for National Education Standards and Quality Assessment (ONESQA) (Office for National Education Standards and Quality Assessment, 2002). The measures in nine aspects are shown as follows.

Aspect	Measures
Aspect 1: Mission, Objective, and Planning	<ul style="list-style-type: none"> • Number of unit or personnel that is responsible for communicating the plan to society • Number of revision of planning • Number of plan and project that follows academic development plan of the Faculty

Table 7.30 Measures in nine aspects from Ministry of Education and ONESQA

Aspect	Measures
Aspect 2: Teaching and Learning	<u>Curriculum</u> <ul style="list-style-type: none"> • Number of subjects that focuses on student and support real-life learning • Number of subjects in master degree level that cannot announce grade in time • Number of subjects that have course outline per total number of subjects • Number of subjects that have courseware per total number of subjects
	<u>Lecturer</u> <ul style="list-style-type: none"> • Student's opinion on lecturer's teaching efficiency • Research for learning development • Number of foreign lecturers • Staff-student ratio • Percentage of lecturers who hold doctoral degree • Ratio of lecturers who hold academic position (professor/associate professor/assistant professor/lecturer) • Number of lecturers that specify their area of specialization per total number of lecturer • Number of new lecturers who has first or second class honour per total number of new lecturers • Number of lecturers who leave for studying • Number of publications per total number of lecturer • Number of lecturers who fail to submit the academic output per total number of lecturers who finish the sabbatical leave • Average work load of the lecturer • Number of lecturers who participate the seminar that is related to the development of teaching and learning per total number of lecturer

Table 7.30 Measures in nine aspects from Ministry of Education and ONESQA (continued)

Aspect	Measures
Aspect 2: Teaching and Learning	<u>Student and graduate</u> <ul style="list-style-type: none"> • Percentage of graduates who are employed or further study within four months after graduation • Number of publications from doctoral theses per total number of doctoral theses • Number of publications from master theses per total number of master theses • Number of graduates who hold the first class honour • Number of graduates who graduate within normal period • Number of graduates per number of lecturers • Entrance examination score of incoming student (1st year student) • Number of students who choose the Faculty in the first rank in the entrance examination • Number of students who leave because of the stress • Number of students that Faculty admits directly (without taking the national entrance examination) per total number of candidates • Number of disable students per total number of students • Number of students who misconduct in the examination
	<u>Budgeting</u> <ul style="list-style-type: none"> • Operating budget per total number of full time equivalent students • Total expenses and budgets for library and information technology per total number of full time equivalent students • Software budget per total number of student in a year • Budget for teaching and learning process per total operating budget • Budget for lecturer development per total operating budget

Table 7.30 Measures in nine aspects from Ministry of Education and ONESQA (continued)

Aspect	Measures
Aspect 2: Teaching and Learning	<u>Teaching and learning supporting resources</u> <ul style="list-style-type: none"> • Number of computers that are used for teaching and learning per total number of full time equivalent students
Aspect 3: Student Recreational Activities	<ul style="list-style-type: none"> • Number of student activities and projects per total number of full time equivalent students • Number of students who participate the summer practical training per total number of students • Number of students who participate the Thammasat Dummy Company (TDC) per total number of students • Number of times that company come to the University to provide information of job application at the placement centre • Number of national and international awards
Aspect 4: Research	<ul style="list-style-type: none"> • Number of publications per total number of full time lecturer • Number of researches that are used for other researches or supporting teaching and learning or for business in the industry or for the country development per total number of full time lecturer • External research grant per total number of full time lecturer • Internal research grant per total number of full time lecturer • Number of research outputs per total number of lecturer
Aspect 5: Social Academic Service	<ul style="list-style-type: none"> • Number of activities and projects that provide social academic service • Number of lecturers who are members of the academic committee or committee in professional bodies or theses committee or external research committee per total number of full time lecturer

Table 7.30 Measures in nine aspects from Ministry of Education and ONESQA (continued)

Aspect	Measures
Aspect 6: Preservation of Arts and Culture	<ul style="list-style-type: none"> • Number of activities that are related to preservation of arts and culture • Number of subjects that are related to Thai culture
Aspect 7: Administration	<ul style="list-style-type: none"> • Number of meetings or hours of meeting of the management committee • Number of meetings or hours of meeting of the Faculty committee • Number of meetings or hours of meeting of the lecturers in the Faculty • Percentage of the compliance of the system to search for management of the Faculty
Aspect 8: Budgeting	<ul style="list-style-type: none"> • Percentage of salaries of staff to total operating expenses • Percentage of salaries of management staff to total operating expenses or number of non-academic staff per total number of full time equivalent students • Percentage of central administrative expenses to total operating expenses • Percentage of net profit to total operating expenses • Total salaries of staff per total number of graduates • Actual expenses per budgeted expenses
Aspect 9: Quality Assurance and Enhancement	<ul style="list-style-type: none"> • Number of activities that are related to internal quality assurance or budget for internal quality assurance • Actual expenses per budgeted expenses for quality assurance

Table 7.30 Measures in nine aspects from Ministry of Education and ONESQA (continued)

Data analyses from observation

The Faculty of Commerce and Accountancy established formal performance measures for the first time in 2003. Some indicators, such as staff-student ratio or percentage of graduate employment, were however used as internal management

indicators. In year 2002, the Faculty prepared its first Self Assessment Report (SAR) to submit to the University quality audit committee, but measures were only qualitative. In 2003, the Faculty had established the performance measures in nine aspects as previously described in the data analyses from documentation. These measures include both qualitative and quantitative measures.

However staff in the Faculty do not know of these measures and there was only one two-day seminar, in 2003, that was related to the development of performance measures. However most academic staff did not attend that seminar. Hence the performance measures of the Faculty are not well recognised among lecturers and non-academic staff. Only some members of committee who are responsible for this task involve in the process of creating the performance measures for the Faculty.

Conclusion

Results from interview and questionnaire are similar, and many interviewees and respondents are not aware of Faculty performance measures. Results from documentation, however, indicate that all performance indicators that interviewees and respondents fail to indicate are measured within the Faculty. These measures are included in the Self Assessment Report (SAR) that is submitted to the University audit committee. These results confirm that the Faculty measures the quality of graduate, learning, learning support, research, academic service to the community, preservation of art and culture, administration and management, and quality assurance system, but these measures are not well recognised among the staff and other Faculty stakeholders. This is further confirmed by personal observation. Although a seminar was held in order to disseminate the results of the performance measurement project and also to ask for staff opinion on new measures, few people attended it. This evidence leads to the conclusion that the existing performance measurement system is unsuccessful as it cannot gain the awareness of staff within the Faculty.

7.2.2.2 The objectives of performance measures

Data analyses from interview

Most interviewees cannot identify a reason for measuring the quality in each category. However for those who can, most believe that it is measured only for supporting management decision making and there is no real requirement for the measurement.

However two interviewees know that there is now a government agency, called the Office for National Education Standards and Quality Assessment (ONESQA) that is established in order to measure the University performance. Therefore the University needs to prepare and report many performance measures to this organisation. Table 7.31 shows the results from the interview regarding to the objectives of performance measures in each category (the number presented in the table is the number of interviewees).

Performance measures	Objectives		
	Government requirements	For internal management	Do Not Know
Quality of graduate	-	5	5
Quality of learning	2	5	3
Quality of learning support	-	5	5
Quality of research	-	5	5
Quality of academic service to community	-	6	4
Quality of preservation of art and culture	1	3	6
Quality of administration and management	1	5	4
Quality of quality assurance system and mechanism	1	5	4

Table 7.31 The objective of performance measures – results from interview

Data analyses from questionnaire

When asked the reason for measuring these performance indicators most of respondents indicate that quality of graduate, learning, learning support, research, and academic service to the community are measured for internal management purposes. However most of respondents do not know the reason for measuring

quality of preservation of art and culture, administration and management, and quality assurance system and mechanism. Table 7.32 summarises the results from questionnaire regarding to the objective of performance measures.

Performance measures	Government requirements	For internal management	Both objectives	Do not know
Quality of graduate	10.3%	46.2%	30.8%	12.8%
Quality of learning	10.3%	41.0%	25.6%	23.1%
Quality of learning support	2.6%	46.2%	17.9%	30.8%
Quality of research	7.7%	38.5%	28.2%	25.7%
Quality of academic service to community	7.7%	38.5%	17.9%	35.9%
Quality of preservation of art and culture	2.6%	15.4%	7.7%	71.8%
Quality of administration and management	7.7%	30.8%	15.4%	46.2%
Quality of quality assurance system and mechanism	5.1%	28.2%	25.6%	41.0%

**Total number of respondents is 39*

Table 7.32 The objective of performance measures – results from questionnaire

Data analyses from documentation

It is still too early to conclude that all measures in those aspects are required to be submitted. This is because, although the University uses the SAR submission to satisfy both the ONESQA and the Ministry of Education, there is no punishment for failing to report at the moment.

The report might be helpful for management internally but there is again no evidence to support that the measures are really used for the management purposes.

Data analyses from observation

From personal observation, these measures are rarely discussed among staff within the Faculty. Not many staff know what they are for or whether they exist. Only staff who were involved in the creation of the measures know why they are selected.

Conclusion

Results from interview and questionnaire indicate that measures identified in eight specified categories in the SAR are mostly used for internal management. However results from documentation and observation yield contradictory results. There is no evidence that these measures are used for the management in the Faculty. The possible explanation of contradiction is that management may really use these measures for decision making that researcher is not aware, while interviewees and respondents are. An alternative explanation is that the interviewees and respondents answering questions on the objectives of measures may be saying how it 'should be used', instead of how it 'really is used' for internal management. Therefore the results from interview and questionnaire are not similar to those from documentation and observation. As there is no evidence to explain why the others recognise the uses of the measures of which the researcher is not aware, the second explanation is believed to be more reasonable.

7.2.2.3 Benchmarking of the measures

Data analyses from interview

Most interviewees cannot identify whether the quality of each SAR specified category is benchmarked or not. However most of those who do know believe that it is benchmarked against other faculties within the University, or against the other universities, or against an international standard. Table 7.33 summarises the results of the benchmarking of the measures from the interview (the number presented in the table is the number of interviewees).

Performance measures	Benchmarking			
	Yes	If yes, against	No	Do not know
Quality of graduate	4	Other faculties within the University or the other universities	1	5
Quality of learning	3	The international standard	2	5
Quality of learning support	3	The international standard	1	6
Quality of research	3	Other faculties within the University or the other universities	2	5
Quality of academic service to community	2	Other faculties within the University	4	4
Quality of preservation of art and culture	2	Other faculties within the University	3	5
Quality of administration and management	2	Other faculties within the University	3	5
Quality of quality assurance system and mechanism	2	Other faculties within the University	3	3

Table 7.33 Benchmarking of the measures – results from interview

Data analyses from questionnaire

Most respondents believe that the quality of graduate is benchmarked, but for all other categories most respondents do not believe in, or do not know of any benchmarking. Table 7.34 shows the results from questionnaire.

Performance measures	Benchmarking		
	Yes	No	Do not know
Quality of graduate	53.8%	25.6%	20.5%
Quality of learning	28.2%	38.5%	33.3%
Quality of learning support	23.1%	41.0%	35.9%
Quality of research	35.9%	38.5%	25.6%
Quality of academic service to community	25.6%	38.5%	35.9%
Quality of preservation of art and culture	15.4%	48.7%	35.9%
Quality of administration and management	23.1%	43.6%	33.3%
Quality of quality assurance system and mechanism	30.8%	38.5%	30.8%

**Total number of respondents is 39*

Table 7.34 Benchmarking of the measures – results from questionnaire

Data analyses from documentation

The only documents that provide data for benchmarking data are the Self Assessment Reports (SAR) from other faculties in the University. These provide information on performance measures in those faculties. The University gathers all information and then distributes a one-page document on the number of quantitative performance measures of the University. However this document is only for information, and at the present the Faculty does not use it as a source of benchmarking information.

Data analyses from observation

Some lecturers are interested in benchmarking the quality of graduates in term of the employment after graduation. However comparative information between universities is very difficult to find, therefore it can only be benchmarked against the other faculties in the University. One problem with comparison, however, is that the nature of the work in different disciplines is totally different. For example, the employment of graduates in the Faculty of Commerce and Accountancy cannot be as high as that of graduates from the Medical School because all Medical School graduates must work for a hospital for a specific period of time before they can work independently or return to higher education. This makes the reported employment of the graduates of the Medical School very high comparing to the other disciplines.

Many academic staff also express an interest in comparing the Faculty's performance to other business schools from other universities. However as previously mentioned, this cannot be done easily at the time the research is conducted. However in the near future, the possibility of benchmarking may be higher as a government grant, based on the performance measures of each university, may be awarded. Consequently, universal information of a performance measure will be made available to everybody.

Conclusion

The results from interview, questionnaire, documentation, and observation agree in that there is no benchmarking for performance measures in the Faculty. The quality of graduate in terms of the employment after graduation is only category that is benchmarked. The other measures however are not benchmarked, although staff are interested in benchmarking them. Benchmarking will be possible when the information is more readily available in near future. Then the University will become autonomous university, and must report the information on performance measures to related government agencies.

7.2.2.4 The relationship between measures and objectives

Data analyses from interview

Quality of graduate, learning, and research are categories that interviewees believe are closely related to objectives of the University. On the other hand, the quality of preservation of art and culture is believed to be least related to the objectives of the University. One interviewee even states that it is not related to the objectives of the University at all. Table 7.35 presents the results from interview regarding to the relationship between measures and objectives (the number presented in the table is the number of interviewees).

Performance measures	Least	Less	Average	Much	Very Much
Quality of graduate			2	7	
Quality of learning			4	5	
Quality of learning support		2	3	4	
Quality of research		1	3	5	
Quality of academic service to community		1	5	4	
Quality of preservation of art and culture	1	8			
Quality of administration and management		1	6	2	
Quality of quality assurance system and mechanism		1	5	3	

Table 7.35 The relationship between measures and objectives – results from interview

Data analyses from questionnaire

All performance measures except the measure for quality of preservation of art and culture are believed to be closely related to the objectives of the University. If they are ranked by using the standard 5-point Likert scale according to the relationship to the objectives of the University, the rankings are as follows

- 1. Lowest relationship
- 2. Low relationship
- 3. Average relationship
- 4. High relationship
- 5. Very high relationship

According to these criteria, the quality of graduate is ranked first, followed by quality of research, learning, learning support, quality assurance system and mechanism, academic service to community, administration and management, and preservation of art and culture. Table 7.36 summarises the result from questionnaire regarding to the relationship between measures and objectives.

Performance measures	Least	Less	Average	Much	Very much
Quality of graduate	2.6%	0%	7.7%	10.3%	74.4%
Quality of learning	0%	0%	5.1%	30.8%	56.4%
Quality of learning support	0%	0%	10.3%	46.2%	35.9%
Quality of research	0%	0%	5.1%	25.6%	61.5%
Quality of academic service to community	0%	0%	20.5%	41.0%	30.8%
Quality of preservation of art and culture	5.1%	15.4%	46.2%	15.4%	10.3%
Quality of administration and management	0%	5.1%	17.9%	46.2%	23.1%
Quality of quality assurance system and mechanism	2.6%	2.6%	12.8%	38.5%	35.9%

**Total number of respondents is 39*

Table 7.36 The relationship between measures and objectives – results from questionnaire

Conclusion

The data analyses from interview and questionnaire yield the similar results. Quality of graduate is believed to be closely related to the objectives of the University, while

quality of preservation of art and culture is believed to be least related to the objectives. This result is not surprising as one of the objectives of the University is to produce graduates of high quality therefore the quality of graduate is the most direct measure informing that the Faculty achieve this objective. On the other hand, the preservation of art and culture, although is also mentioned in the Faculty mission statement, interviewees and respondents still believe that it is not the main objective of the Faculty and the University.

7.2.2.5 The ranking of importance of the performance measures

Data analyses from interview

Measures related to quality of graduate are believed to be most important and 50% of interviewees put it as most important. On the other hand measure related to quality of preservation of art and culture is believed to be the least important as 60% of interviewees place it last.

After allocating a score into each rank by allocating score of 8 for “1st rank”, 7 for “2nd rank”, and so on, until 1 for “8th rank”, the relative importance of the performance measures are as follows.

1. Quality of graduate
2. Quality of learning
3. Quality of research
4. Quality of learning support
5. Quality of academic service to community
6. Quality of quality assurance system and mechanism
7. Quality of administration and management
8. Quality of preservation of art and culture

Table 7.37 presents results of the ranking of the performance measures based on the opinions from the interviewees.

Performance measures	Rank 1 st	Rank 2 nd	Rank 3 rd	Rank 4 th	Rank 5 th	Rank 6 th	Rank 7 th	Rank 8 th
Quality of graduate	56%	11%	30%					
Quality of learning	33%	33%		33%				
Quality of learning support			20%	22%	33%	22%		
Quality of research		33%	30%	22%			11%	
Quality of academic service to community	11%			22%	33%	11%	22%	
Quality of preservation of art and culture						11%	22%	75%
Quality of administration and management		11%			22%	33%	22%	13%
Quality of quality assurance system and mechanism		11%	20%		11%	22%	22%	13%

**Total number of interviewees is 10. However the percentage shown in figure is based on the total answers not the total number of interviewees*

Table 7.37 Ranking of importance of the performance measures – results from interview

Data analyses from questionnaire

Again, the quality of graduate is ranked 1st by most respondents, while the quality of preservation of art and culture is rank last (8th). Again if allocating the score of each rank by allocating score of 8 for “1st rank”, 7 for “2nd rank”, and so on, until 1 for “8th rank”, the rank of importance of the performance measures is as follows.

1. Quality of graduate
2. Quality of learning
3. Quality of research
4. Quality of learning support
5. Quality of administration and management
6. Quality of academic service to community
7. Quality of quality assurance system and mechanism
8. Quality of preservation of art and culture

Table 7.38 presents results of the ranking of the performance measures based on the opinions from the respondents of the questionnaire.

Performance measures	Rank 1st	Rank 2nd	Rank 3rd	Rank 4th	Rank 5th	Rank 6th	Rank 7th	Rank 8th
Quality of graduate	74.4%	10.3%	5.1%	5.1%	2.6%	0%	2.6%	0%
Quality of learning	17.9%	41.0%	28.2%	7.7%	5.1%	0%	0%	0%
Quality of learning support	0%	15.4%	23.1%	28.2%	17.9%	10.3%	2.6%	2.6%
Quality of research	15.4%	25.6%	28.2%	23.1%	7.7%	0%	0%	0%
Quality of academic service to community	2.6%	7.7%	5.1%	12.8%	23.1%	17.9%	25.6%	2.6%
Quality of preservation of art and culture	0%	0%	2.6%	0%	2.6%	2.6%	7.7%	76.9%
Quality of administration and management	2.6%	10.3%	2.6%	5.1%	25.6%	35.9%	15.4%	0%
Quality of quality assurance system and mechanism	0%	7.7%	2.6%	12.8%	7.7%	25.6%	35.9%	7.7%

**Total number of respondents is 39*

Table 7.38 Ranking of importance of the performance measures – results from questionnaire

Conclusion

Results from data analyses from interview and questionnaire generally agree. The ranking from data from the interview and questionnaire are very similar. The 1st to 4th positions in the ranking are the same as the quality of graduate is ranked first followed by quality of learning, research, and learning support. The last position in the ranking is also the same, the quality of preservation of art and culture.

The result shows that staff and other University stakeholders are more interested in output (graduate) than process (learning) and input (learning support). Outputs include graduates, research, and academic service to community. However the only output that is in the focus of staff and University stakeholders is the graduate, and others are placed into the lower ranks.

Conclusion of Section II: The existing performance measurement

As previously mentioned, this section attempts to answer the second research question

‘What are the problems of the existing performance measurement system pertaining to the case study university?’

Results reveal that most of stakeholders are not aware of the performance measures submitted to the University audit committee. Based on observation, although there is an attempt to promote the awareness of them by organising the seminar relating to performance measurement system, very few staff participated in the event. There is also no evidence that these measures are used for planning and control purposes in the organisation. They are not used for benchmarking, although many staff indicate that they are useful.

Staff and other stakeholders also find that these measures are not related to objectives of organisation. They cannot find any linkage between each measure and objectives of organisation (except the obvious one, which is the quality of graduate). Stakeholders are also more interested in output measures (graduate quality) than input and process measures.

It can be concluded that the problems of the existing performance measurement are as follows:

- There is a low awareness of the performance measurement system and of measures among the University’s staff and stakeholders.
- Existing measures are not used for management decision making. They are only kept for record.
- Staff and other stakeholders cannot identify a link between each measure and the objectives of the organisation.
- There is more emphasis on output measures than input and process measures, which are important as performance drivers.

To some extents, it can be implied that the University has more than enough measures, and that, if a classical Balanced Scorecard is to be constructed, they can be easily categorised into four perspectives in the Balanced Scorecard as follows.

Customer perspective: measures in quality of graduate, research, and academic service to community as these are three main ‘customers’ for a university

Internal business process perspective: measures in quality of learning, learning support, administration and management.

Learning and growth perspective: measures in quality of quality assurance system and preservation of art and culture.

Financial perspective: some financial measures in quality of administration and management

However allocating the existing measures into four perspectives is obviously not a proper way to construct the Balanced Scorecard only by. More inputs from stakeholders are obviously needed as basis for the design of the Balanced Scorecard. This topic is later investigated in this chapter.

7.2.3 Section III: The use of EVA®

This section aims to answer the third research question

‘What is the perception of the case study university’s stakeholders on the use of EVA® as the performance measurement model?’

For this section, again the data is collected from two sources of evidence: interview and questionnaire. Since EVA® is not yet applied, documentation and observation are not available here.

7.2.3.1 Existing financial measures

Data analyses from interview

1. Existing financial measures in the Faculty

Four interviewees indicate that the existing financial indicators in the Faculty are related to the budgeting, while the other two mention profit. The remainders mention total expense per number of student, and financial ratios such as return of investment (ROI) or even return on equity (ROE).

2. Satisfaction with existing financial measures

Most interviewees indicate that it is difficult to indicate whether they are satisfied with existing financial measures of the Faculty as they are not involved much in the process, or even if involved, they do not relate the existing financial measures to their work in the organisation. However, when asked to identify their feelings of existing financial indicators, most interviewees indicate a level of ‘fairness’.

3. Problems of financial measures

Half of the interviewees fail to identify any problems of existing financial indicators of the Faculty, while the rest raise the problem that the financial measures do not reflect the quality of graduate and therefore better measures in the future should be used.

Data analyses from questionnaire

1. Existing financial measures in the University

Most respondents (48.7%) do not know what financial measures are used in the Faculty, while 23.1% are not certain and only 25.6% know what they are. Most respondents (33.3%) do not know the reason of measuring financial

measures within the Faculty. 20.5% believe that it is for internal management while only 5.1% indicate that it is a requirement for national reporting. Table 7.39 summarises the results from the questionnaires.

Do you know what existing financial measures in your organisation are?	Yes	No	Not sure
	25.6%	48.7%	23.1%
Why does your organisation measure those financial measures?	The reason		%
	Requirement		5.1%
	For internal management		20.5%
	Both objectives		17.9%
	Do not know		33.3%

**Total number of respondents is 39*

Table 7.39 Existing financial measures in the Faculty

2. Satisfaction with existing financial measures

41.0% of respondents are indifferent about existing financial measures. No one is extremely satisfied with them. The numbers of respondents who are dissatisfied are higher than the numbers of respondents who are satisfied with the existing financial measures. Table 7.40 illustrates the results from questionnaire.

Are you satisfied with the existing financial measures in your organisation?	Satisfaction level	%
	Extremely satisfied	0%
	Satisfied	5.1%
	Neutral	41.0%
	Dissatisfied	5.1%
	Extremely dissatisfied	7.7%

**Total number of respondents is 39*

Table 7.40 Satisfaction with the existing financial measures

3. Problems of financial measures

Respondents indicate that the problems of the existing financial measures are mainly related to the fact that they are not related to University or Faculty objectives (30.8%) and that the accounting system in the University is obsolete (30.8%). Table 7.41 shows the results from the questionnaire.

What are the problems with the existing financial performance measures?	Problems	%
	Do not relate to the University's objectives	30.8%
	Obsolete financial data	25.6%
	Obsolete accounting system	30.8%
	Slowness of the financial report	17.9%
	Financial data is not useful	20.5%
	Do not know	15.4%
	Other	10.3%

**Total number of respondents is 39*

Table 7.41 Problems with financial measures

Conclusion

Data analyses from interview and questionnaire yield similar results, and most interviewees and respondents fail to identify existing financial performance measures in the Faculty or in the University. Examples of existing financial measures are also varied as a result of the lack of knowledge in this area. The reason for the existence of financial measures is not widely recognised and most interviewees and respondents are neither satisfied nor dissatisfied with existing financial measures. This is again due to the fact that they do not even know whether they exist thus they fail to provide the answer whether they are satisfied with the existing financial measures.

Results indicate that financial measures do not reflect the quality of education and are not related to objectives of the Faculty of the University. Another problem includes the obsolescence of the existing accounting system. This result is confirmed by the further investigation showing that the income statement and balance sheet do not even exist in the Faculty or in the University.

7.2.3.2 Awareness and acceptance of EVA®

Data analyses from interview

All interviewees have heard the term ‘EVA®’. This is not surprising as interviewees are considered ‘the expert’ in EVA® and are carefully selected to participate the interview as mentioned in Chapter Six. However, when asked what EVA® is, they come up with different terms.

After explaining the concept of EVA® to interviewees to assure that everybody understands the same concept and asking whether the University should implement EVA®, three interviewees agree, and another three interviewees disagree because the University objective should not be to maximise profits. If EVA® is implemented in the University then, sooner or later, some departments or faculties will disappear. It is interesting that four interviewees do not disagree with the implementation of EVA® in the University. They are concerned that it is difficult to implement because the accounting system of the University differs significantly from that of a company. Another problem is that it is difficult to allocate costs to each unit in the University. For the implementation level, all interviewees who agree with this concept mention that it should be implemented at every level in the University. Table 7.42 shows the cross tabulation of position of interviewees and acceptance of EVA® (the number presented in the table is the number of interviewees).

Position	Acceptance of EVA®		
	Yes	No	Depends
Lecturer with management position	1	2	2
Lecturer without management position	-	-	1
Student	1	1	
Administrative staff	-	-	1
Financial supporter	1	-	-

Table 7.42 Cross tabulation of position of interviewees and acceptance of EVA®

Based on cross tabulation, lecturer with management position is more likely to not support the uses of EVA®. This may be the sign of resistance to change as they might be afraid that the new tool like EVA® may make their duties sophisticate or

might reduce their current power. However there is still a room for success as majority still do not decide whether EVA® should be used in the University or not. Thus to implement EVA® successfully, the change is needed to be managed. This is the issue in section 9.2.3 in Chapter Nine.

Data analyses from questionnaire

76.9% of respondents have previously heard of the term ‘EVA®’. However only 15.4% understand the concept very well, 53.8% know it partly and 12.8% do not know what it means at all. After explanation of this concept, when asked whether EVA® should be implemented within the University, 48.7% indicate that it should be implemented while 35.9% oppose to it. For the characteristics of those who support EVA® implementation, it is found that academic position and highest education do not affect the perception since the percentage of the acceptance of EVA® is similar among various groups with different academic position and highest education. However it is interesting to find that almost all lecturers who work in the Department of Finance oppose to this concept. This may be due to the fact that they are very familiar with EVA® and strongly believe that it should only be implemented in the for-profit organisation. The other interesting point is that young lecturers seem to support EVA® concept. All lecturers, who work for the University for less than five years, support the concept of EVA® implementation. This suggests that young lecturers may have less resistance to changes than the older and more experienced staff.

For lecturers who support the uses of EVA® for the University, 25.6% believe that it should be implemented for the whole University and 20.5% support its use in project within the University. Table 7.43 shows the awareness of EVA® and Table 7.44 shows the perception of respondents on the implementation of EVA® in the University.

Have you previously heard the term ‘Economic Value Added (EVA®)’?	Yes	No
	76.9%	23.1%
If yes, do you know what EVA® is?	Level of knowledge	%
	Know very well	15.4%
	Partly know	53.8%
	Do not know	12.8%

**Total number of respondents is 39*

Table 7.43 Awareness of EVA®

Do you think that EVA® should be implemented within the University?	Yes	No	Do not know
	48.7%	35.9%	12.8%
If yes, to which level should EVA® be implemented?	Level of implementation		%
	University level		25.6%
	Faculty level		7.7%
	Department level		0%
	Project level		20.5%
	Other level		2.6%

**Total number of respondents is 39*

Table 7.44 Perception of respondents on the implementation of EVA®

Conclusion

The results from interview and questionnaire concur, and most interviewees and respondents have heard the term ‘EVA®’ and can identify that it is a financial performance measure that is used in many corporations. Opinion on whether to implement the EVA® concept in the University is equally divided. Reasons for disagreement include the belief that the University objective is not to maximise profits, and concern that the existing accounting system does not allow correct calculation of the EVA®. Interviewees who agree with implementation indicate that it should be implemented in every level in the University. This result is also similar to the result from questionnaire.

Conclusion of Section III: The use of EVA®

This section aims to answer the third research question

‘What is the perception of the case study university’s stakeholders on the use of EVA® as the performance measurement model?’

Results confirm what is found in section II, that most of stakeholders do not recognise the use of financial measures in the University. In fact knowledge of and support for financial measures is even lower than for non-financial measures as some stakeholders believe that the financial measures used in the University are obsolete and do not reflect the ultimate objective of the University.

Staff and stakeholders are also reluctant to accept EVA®. Results also indicate that some staff and stakeholders, while aware of this concept, still do not see any benefit of EVA®. It can imply that if EVA® is to be implemented successfully, there must be communication to all staff and stakeholders about the uses and limitations of this tool.

7.2.4 Section IV: The use of the Balanced Scorecard

This section attempts to answer the fourth research question

‘What is the perception of the case study university’s stakeholders on the use of the Balanced Scorecard as the performance measurement model?’

As in section III, data is collected from only two sources of evidence: interview and questionnaire.

7.2.4.1 Awareness and acceptance of the Balanced Scorecard

Data analyses from interview

All interviewees have heard the term ‘The Balanced Scorecard’. Again this is not surprising taking into account that interviewees are carefully selected based on their knowledge of the Balanced Scorecard. When asked what the Balanced Scorecard is, most of the majority identify that it is the one of a performance measurement systems, that it includes both financial and non-financial measures.

After explaining the concept of the Balanced Scorecard to the interviewees to assure that everyone understands the same concept, and then asking whether the University should implement the Balanced Scorecard, all of them support the concept and agree that it should be implemented in every level within the University.

Data analyses from questionnaire

Almost all respondents, 97.4%, have previously heard the term the ‘Balanced Scorecard’. 35.9% know it very well and 53.8% know it partly. When asked whether the Balanced Scorecard should be implemented within the University, most of them (89.7%) indicate that the Balanced Scorecard should be implemented with 59.9% believe that it should be implemented at the University level while 15.4% believe that the Faculty level is more appropriate. Table 7.45 shows indicated staff awareness of the Balanced Scorecard and Table 7.46 shows support for implementation of it at the University and Faculty level.

Have you previously heard the term ‘Balanced Scorecard’?	Yes	No
	97.4%	2.6%
If yes, do you know what the Balanced Scorecard is?	Level of knowledge	%
	Know very well	35.9%
	Partly know	53.8%
	Do not know	5.1%

**Total number of respondents is 39*

Table 7.45 Awareness of the Balanced Scorecard

Do you think that The Balanced Scorecard should be implemented within the University?	Yes	No	Do not know
	89.7%	7.7%	2.6%
If yes, to which level should the Balanced Scorecard be implemented?	Level of implementation		%
	University level		59.9%
	Faculty level		15.4%
	Department level		5.1%
	Project level		5.1%
	Other level		0%

**Total number of respondents is 39*

Table 7.46 Perception of respondents on the implementation of the Balanced Scorecard

Conclusion

Results from interview and questionnaire are similar. Most interviewees and respondents have heard the term ‘the Balanced Scorecard’ and know what it is. Most also agree that it should be applied in every level within the University.

7.2.4.2 Measures in the four perspectives of the Balanced Scorecard

Data analyses from interview

Interviewees were asked to specify the possible measures in each perspective in the Balanced Scorecard. Results are shown in Table 7.47. Out of twenty measures proposed by interviewees, fourteen measures are currently reported in the University and six measures are new and not currently reported. The percentage of awareness of the measures currently reported is also presented in the table. This information is obtained from the results in the section II. For the number of measures in each perspective, there are six measures in the financial perspective, six measures in the customer perspective, six measures in the internal business process perspective, and only two measures in the learning and growth perspective.

When comparing to results of the awareness of the existing performance measures as reported in the section II, there are some measures that are well known in the University but not included into the Balanced Scorecard. These measures, which pass the level of 50% awareness, are employer satisfaction (56.4% awareness), number of credit or hour in practical learning course (51.3%), and number of

process/activity that is related to internal quality assurance (51.3%). This also suggests that those measures, although well known in the University, are not useful and good enough to be included into the Balanced Scorecard in the opinions of the interviewees.

Perspective	Measures	Currently measured?	% of awareness*
Financial	Operating expense per number of full time equivalent student	Yes	30.8%
	Percentage of staff salary per total operating expense	Yes	25.6%
	Percentage of management staff salary per total operating expense	No	N/A
	Percentage of staff salary per total number of graduate	No	N/A
	Percentage of central administrative expense per total operating expense	Yes	17.9%
	Percentage of total income per total operating expense	Yes	7.7%
Customer	Percentage of employment of graduate within one year	Yes	79.5%
	Percentage of graduate who receives the first class honour	No	N/A
	Percentage of graduate who completes the study within normal time	No	N/A
	Number of activity/project for academic service to community	Yes	48.7%
	Number of publication per full time lecturer	Yes	76.9%
	External research grant per full time lecturer	Yes	30.8%
Internal Business Process	Staff-student ratio	Yes	71.8%
	Percentage of lecturer who obtains doctoral degree or equivalent	Yes	64.1%
	Student's opinion on lecturer's teaching efficiency	Yes	74.4%
	Number of computer per number of full time student equivalent	Yes	43.6%
	Number of hour for library and computer service	Yes	33.3%
	Number of computer network connection	Yes	20.5%
Learning and Growth	Number of unit that passes the external quality assurance assessment	No	N/A
	Number of staff-training hour	No	N/A

**% of awareness is obtained from section II (section 7.2.2.1)*

Table 7.47 Measures selected in each perspective in the Balanced Scorecard – results from interview

Data analyses from questionnaire

Only measures that pass the level of 50% based on the opinions of respondents in each perspective are selected as shown in Table 7.48. The level of 50% is selected because it indicates that more than half of respondent agree that the specific measure should be included in each perspective. Out of fifteen measures selected, ten measures are currently reported in the University and five measures are new and currently not reported. The percentage of awareness of the measures currently reported is also presented in the table. This information is again obtained from the results in the section II. For the number of measures in each perspective, there are three measures in the financial perspective, five measures in the customer perspective, six measures in the internal business process perspective, and only one measure in the learning and growth perspective. This also suggests that respondents are more interested in customer and internal business process than in financial and learning and growth perspectives. It can also imply that current financial measures are not good enough because out of three measures in the financial perspective, two are new. This supports the results found in the section III.

Perspective	Measures	% of respondent*	% of awareness**
Financial	Operating expense per number of full time equivalent student	64.1%	30.8%
	Operating expense for academic staff development per total operating expense	61.5%	N/A
	Operating expense for teaching and learning development per total operating expense	59.0%	N/A
Customer	Percentage of employment of graduate within one year	69.2%	79.5%
	Percentage of further studying of graduate within one year	69.2%	64.1%
	Number of publication per full time lecturer	66.7%	76.9%
	Internal research grant per full time lecturer	59.0%	33.3%
	External research grant per full time lecturer	59.0%	30.8%

**Total number of respondents is 39*

***% of awareness is obtained from section II (section 7.2.2.1)*

Table 7.48 Measures selected in each perspective in the Balanced Scorecard – results from questionnaire

Perspective	Measures	% of respondent*	% of awareness**
Internal Business Process	Number of computer per total full time equivalent student	64.1%	43.6%
	Number of student's activity/project per total number of student	64.1%	20.5%
	Percentage of lecturer who possesses academic position	61.5%	N/A
	Student's opinion on lecturer's teaching efficiency	59.0%	74.4%
	Staff-student ratio	56.4%	71.8%
	Number of national and international award related to learning process	56.4%	N/A
Learning and Growth	Percentage of plan/project that follows the University's development plan	56.4%	N/A

**Total number of respondents is 39*

***% of awareness is obtained from section II (section 7.2.2.1)*

Table 7.48 Measures selected in each perspective in the Balanced Scorecard – results from questionnaire (continued)

It is also noticeable that when comparing to results of the awareness of the existing performance measures as reported in the section II, there are some measures that are well known in the University but not included into the Balanced Scorecard. These measures, which pass the level of 50% awareness, are employer satisfaction (56.4% awareness), number of credit or hour in practical learning course (51.3%), percentage of lecturer who obtains doctoral degree (64.1%), and number of process/activity that is related to internal quality assurance (51.3%). This also suggests that those measures, although well known in the University, are not useful and good enough to be included into the Balanced Scorecard in the opinions of the respondents

Conclusion

Based on the results from interview and questionnaire, the measures that are included into the Balanced Scorecard including the awareness of the measures that are currently reported in the University (results from the section II) are presented in Table 7.49.

Measures	Result from interview	Result from questionnaire	Currently measured?	% of awareness*
Financial Perspective				
1. Operating expense per number of full time equivalent student	Yes	Yes	Yes	30.8%
2. Percentage of staff salary per total operating expense	Yes	No	Yes	25.6%
3. Percentage of management staff salary per total operating expense	Yes	No	No	N/A
4. Percentage of staff salary per total number of graduate	Yes	No	No	N/A
5. Percentage of central administrative expense per total operating expense	Yes	No	Yes	17.9%
6. Percentage of total income per total operating expense	Yes	No	Yes	7.7%
7. Operating expense for academic staff development per total operating expense	No	Yes	No	N/A
8. Operating expense for teaching and learning development per total operating expense	No	Yes	No	N/A
Customer Perspective				
9. Percentage of employment of graduate within one year	Yes	Yes	Yes	79.5%
10. Percentage of further studying of graduate within one year	No	Yes	Yes	64.1%
11. Percentage of graduate who receives the first class honour	Yes	No	No	N/A
12. Percentage of graduate who completes the study within normal time	Yes	No	No	N/A
13. Number of activity/project for academic service to community	Yes	No	Yes	48.7%
14. Number of publication per full time lecturer	Yes	Yes	Yes	76.9%
15. Internal research grant per full time lecturer	No	Yes	Yes	33.3%
16. External research grant per full time lecturer	Yes	Yes	Yes	30.8%

**% of awareness is obtained from section II (section 7.2.2.1)

Table 7.49 Measures selected in each perspective in the Balanced Scorecard – results from both interview and questionnaire

Measures	Result from interview	Result from questionnaire	Currently measured?	% of awareness*
Internal Business Process Perspective				
17. Staff-student ratio	Yes	Yes	Yes	71.8%
18. Percentage of lecturer who obtains doctoral degree or equivalent	Yes	No	Yes	64.1%
19. Student's opinion on lecturer's teaching efficiency	Yes	Yes	Yes	74.4%
20. Number of computer per number of full time student equivalent	Yes	Yes	Yes	43.6%
21. Number of hour for library and computer service	Yes	No	Yes	33.3%
22. Number of computer network connection	Yes	No	Yes	20.5%
23. Number of student's activity/project per total number of student	No	Yes	Yes	20.5%
24. Percentage of lecturers who possess academic position	No	Yes	No	N/A
25. Number of national and international award related to learning process	No	Yes	No	N/A
Learning and Growth Perspective				
26. Number of unit that passes the external quality assurance assessment	Yes	No	No	N/A
27. Number of staff-training hour	Yes	No	No	N/A
28. Percentage of plan/project that follows the University's development plan	No	Yes	No	N/A
**% of awareness is obtained from section II (section 7.2.2.1)				

Table 7.49 Measures selected in each perspective in the Balanced Scorecard – results from both interview and questionnaire (continued)

There are twenty-eight measures included in the Balanced Scorecard. Eight measures are in the financial perspective, eight in the customer perspective, nine in the internal business process perspective, and three in the learning and growth perspective. Out of these measures, eleven are new and are not currently measured in the University. There are seven measures that are proposed by both interviewees and respondents. Those measures are

- Operating expense per number of full time equivalent student (in the financial perspective)
- Percentage of employment of graduate within one year (in the customer perspective)
- Number of publication per full time lecturer (in the customer perspective)
- External research grant per full time lecturer (in the customer perspective)
- Staff-student ratio (in the internal business process perspective)
- Student's opinion on lecturer's teaching efficiency (in the internal business process perspective)
- Number of computer per number of full time student equivalent (in the internal business process perspective)

The result suggests that these measures are important for both interviewees and respondents. All of them are also currently measured in the University. The selected measures shown in Table 7.49 are used as a basis for the design of the Balanced Scorecard for the University. The details of the method used for the design of the Balanced Scorecard are however shown in the next chapter.

Conclusion of section IV: The use of the Balanced Scorecard

This section attempts to answer the fourth research question

'What is the perception of the case study university's stakeholders on the use of the Balanced Scorecard as the performance measurement model?'

The level of awareness and knowledge of the Balanced Scorecard is higher than that of EVA®. Most staff and other stakeholders also support its use at University level.

The results also reveal potentially useful measures in each perspective. These measures will later be grouped according to its strategic objective, and then used to create the Balanced Scorecard for the University in Chapter Eight.

7.3 Findings in the case study research

As previously described, the results in the four sections of this analysis can answer the first four research questions. The fifth and sixth research questions however are answered in the next two chapters when a model is built.

As a result of analyses of interview, questionnaire, documentation, and observation, it can be concluded that the Faculty fails to disseminate its mission to staff and other stakeholders. However the process of budgeting and knowledge of authorisation levels in the Faculty are widely recognised among staff as a result of frequent involvement. Communication within the Faculty is in both top-down and bottom-up, often through meetings and circulated letters. However weaknesses in the communication include a lack of follow-up process, and slowness of the process. The control system in the Faculty is in both written and unwritten forms depending on the type of work involved. Academic staff and other stakeholders also have varying knowledge of the control system, as evidenced when they try to explain the process of change in the Faculty.

A performance measurement system is already in place, but is considered unsuccessful because of a failure to communicate the knowledge and acceptance of the measures to staff and other stakeholders. There are many indicators that measure the quality of education, but few staff know of them. In addition the reasons for measuring quality are not clear. There is also no concrete benchmarking system so what is measured cannot be compared to other faculties or universities. It is also found that staff and stakeholders fail to identify any connection between the measures used and the objectives of the Faculty and the University, except for measures of quality of graduate. This evidence leads to the conclusion that the existing performance measurement system is not effective.

Financial measures are viewed even more poorly. Interviewees and respondents do not have opinion on the satisfaction of existing financial measures, as some of them do not even know what they are. The serious problems of the existing financial measures include a lack of linkage between the financial measures and objectives of the Faculty, and the University, and a perceived obsolescence of the existing accounting system.

Not surprisingly, based on these findings, staff and other stakeholders welcome the uses of the two management tools: EVA® and the Balanced Scorecard. However for EVA®, interviewees and respondents are still reluctant to implement within the whole university as they are still not certain how it can benefit the University. Support for the Balanced Scorecard is more overwhelming, and based on the results of the case study, it should be implemented at the University level.

From these results and findings, EVA® and the Balanced Scorecard for the University are therefore constructed in the next chapter. However before ending this chapter, the quality of case study research is explored in order to assure that what has been found is valid and reliable.

7.4 Quality of case study research

There are two major criteria for evaluating quality of research: reliability and validity. Reliability is ‘the degree, to which measures are free from error and therefore yield consistent results’ (Zikmund, 2003:300). It demonstrates that ‘the operations of a study - such as the data collection procedures - can be repeated, with the same results’ (Yin, 2003:34). Validity is on the other hand ‘the ability of a scale or measuring instrument to measure what it is intended to measure’ (Zikmund, 2003:302). The validity that is related to this case study includes construct validity and external validity. The construct validity is the establishment of ‘correct operational measures for the concepts being studied’ (Yin, 2003:34). On the other hand, external validity is dealing with the establishment of ‘the domain to which a study’s findings can be generalized’ (Yin, 2003:34). Both criteria, the reliability and validity, are discussed in this section.

7.4.1 Reliability of the case research

The objective of focusing on the reliability of this case study is to assure that if a later researcher follows the same procedures as used in this case study, and conduct the same case study all over again, that researcher should arrive at the same findings and conclusions. Note that the emphasis is on conducting the ‘same case study’ not the replication of this case study by doing another case study. The goal of reliability is therefore to minimise the errors and biases in the study.

The generic way to address the reliability problem is to make research steps as operational as possible. According to Yin (2003:38), one possible way to allow the other investigators to repeat the case study is to document the procedures and data collected when doing the case study. The document that includes the procedure of the case study is called a case study protocol, while the document that include the data collected when doing case study is called a case study database.

In this study, the case study protocol was established before collecting any data. The case study protocol contains the instrument, procedure, and general rules to be followed. It is used as a guide when carrying out the data collection. The protocol in this study consists of four main parts as follows.

1. An introduction of the case study research. This includes the background information, the objective of the study, case study issues, and relevant readings about the topic being investigated.
2. Field procedures. This includes the process of gaining access to the organisation, resources needed in the study, information of the sites of the investigation, sources of information, data collection schedule, and data collection procedure.
3. Case study questions. This is a very important part of the case study protocol. It includes the specific questions that are important to the study. The case study research questions are earlier presented in the Chapter Six: Scope and Methodology.

4. A guideline for the case study report (thesis). This includes the outline of the thesis writing.

This case study protocol is prepared in the form of the research proposal, schedule of the study, and proposed writing plan. The case study protocol is discussed with academic supervisor before the case study research is conducted. It is also revised several times before the data collection phase.

The case study protocol is very useful, especially for later researchers that might want to conduct the same study. Without this document, even a researcher who conducts the case study research him/herself cannot even repeat his/her own work. Therefore this protocol increases the reliability of the study.

The case study protocol is one of two documents used for increasing the reliability of this study. The other document that is used in this regard is the case study database. The case study database in this study is separated into two collections; the data or evidentiary base and the report of the researcher. Without these documents, the raw data will not be available for later researchers and it will become very difficult, if not impossible, to do the same case study and arrive at the same results. In this manner, the case study database therefore increases significantly the reliability of this study.

The case study database for this thesis includes the notes, documents, tabular materials, and narratives. The case study note is the result of the researcher's interviews, observations, and document analyses. The notes are typed and recorded in computer files. Another form of note is the audiotapes that are recorded during the interviews. These notes are available for the other investigators to look for relevant information of this study. The case study documents in this study also include all existing documents that are used in the data analyses. Examples are the annual report and the Self Assessment Report (SAR). These documents are collected and filed in such a way that makes them readily retrievable for later inspection. Tabular materials are also recorded. All completed questionnaire are filed and stored in a statistical computer programme. Finally the narratives are produced. These narratives are considered a formal part of the database and not part of the thesis. After collecting

the data from the field, the narratives are written and submitted to the academic supervisor in the form of progress reports every two weeks. These progress reports are also collected in the computer file and are easily retrieved when they are needed.

The case study protocol and the case study database certainly allow later investigators to follow the same procedure, use the same database when conducting the same case study. This increases the possibility that later investigators, when investigating and following these case study protocol and database, will arrive at the same results and findings. Therefore the reliability of this study is achieved.

7.4.2 Validity of the case study research

The relevant validity of this case study research includes the construct validity and external validity. The construct validity is ‘especially problematic in case study research’ (Yin, 2003:35). It deals with the way to select the correct operational measures and to demonstrate that the selected measures indeed reflect the concepts being studied (Yin, 2003:35). The techniques used in this thesis to attack this validity problem include the use of multiple sources of evidence, the establishment of the chain of evidence, and the review of the key informant of the results of the study.

The objective of using multiple sources of evidence in this study is to encourage converging lines of inquiry (Yin, 2003:36). In this study, four sources of evidence are used; interview, questionnaire, documentation, and observation. The data collected from each source of evidence is analysed and the convergence of the result is reported. This method is also termed the triangulation of data sources. With data triangulation, the potential problems of construct validity are addressed and the convergence of the evidence, as presented in previous sections, definitely increases the construct validity of the study.

The second tactic used in this study to increase construct validity is to create a chain of evidence. This chain of evidence means that external observers can relate case study questions, to case study protocol, to case study database, and finally to the results of the case study. As found here, the data analyses in each section are referred to the sources of evidence: interview, questionnaire, documentation, and observation,

which are also referred to the case study database and case study protocol. In each section of the data analyses, the research question is also addressed to identify the reason for conducting the analyses in that section. This chain of evidence helps demonstrate that what is measured is relevant to the concepts being investigated. Therefore the construct validity of this research increases.

The final tactic used in this regard is to review key informants with the results of the study. The obvious evidence of this review occurs when the interview is finished. The tape recording are then transcribed into text and resubmitted to interviewees for reviewing. This procedure has been performed to reconfirm that what has been transcribed is what the interviewees intend to say. After the data has been analysed, the results of this study are also submitted to key informants, both interviewees and questionnaire respondents. This procedure increases the construct validity such that it assures that correct operational measures are selected, and that the selected measures indeed reflect the concepts being studied.

External validity is another issue that is frequently criticised in a case study research. This is related to the way a study's findings is generalised. There are frequent questions that are asked regarding to the generalisation of the case study, for example how the results can be generalised from a single case study or in this study, how the results from one university can be generalised to other universities. This question can be answered in such a way that a case study does not represent a sample in a survey. In doing a case study, the goal is to expand and generalise the theories (analytic generalisation) and not to enumerate frequencies (statistical generalisation). The 'analogy to samples and universes is incorrect when dealing with case studies' (Yin, 2003:37). In a case study research, the researcher is 'striving to generalize a particular set of results to some boarder theory' (Yin, 2003:37).

In this case study, the results of the study can broaden theory so that the contingent variables: organisation structure and culture, perception of stakeholder on the existing problems of the performance measurement system, and the acceptance of EVA® and the Balanced Scorecard for the University can be related to the design of the model that incorporates two management tools: the Balanced Scorecard and EVA®. These two tools are more frequently used in for-profit organisations than in

not-for-profit organisations, for example in a university. The attempt to apply them to university management does broaden the contingency theory of performance measurement system, and can be later tested in other similar organisations. Note that the theory must be tested by replicating the findings in several similar organisations and if replications are made, the theory can be strongly supported. However, this study uses existing theory and applies it to another type of the organisation, resulting in the broadening of theory and construction of more management tools, in this case, the use of the Balanced Scorecard and the EVA® for the University. As a result, external validity is therefore achieved.

The next chapter, Chapter Eight attempts to answer the fifth research questions by presenting the design of the performance measurement model for the University and Chapter Nine aims to answer the sixth research question by investigating the perception of the staff in other public universities on the implementation strategy.

CHAPTER EIGHT: DESIGN OF THE NEW PERFORMANCE MEASUREMENT MODEL

The findings in the last chapter highlighted weaknesses in the current performance measurement system, and in the acceptance of it by stakeholders of the Faculty and the University. In this chapter, a new performance measurement model, which combines two management concepts: EVA® and the Balanced Scorecard, is constructed for the University. It therefore answers the fifth research question. This model aims to assist management staff in public universities in Thailand in diagnosing performance of their universities and making better decisions.

This chapter is separated into three main parts as follows.

1. *The Balanced Scorecard for university.* This part includes the design of the Balanced Scorecard including creating the strategy map for university
2. *EVA® for university.* This part includes the concept of cost of capital for university and the uses of EVA® for both the for-profit parts and not-for-profit parts of university
3. *Combination of two models.* This part attempts to illustrate the process of creating the new performance measurement model for public universities in Thailand.

The aim of this section, as mentioned earlier, is therefore to answer the fifth research question

‘What does the new model, combining EVA® and the Balanced Scorecard into a performance measurement model for public universities in Thailand, look like?’

The details of the design of the new model are presented as follows.

8.1 The Balanced Scorecard for university

Based on previous results shown in Table 7.49, measures are categorised into each of four perspectives in the Balanced Scorecard. These measures are grouped according to the objectives of the measures. In the customer perspectives, there are three objectives, which are high quality of graduate, high quality of research, and high quality of academic service to community. In the internal process perspective, measures are also categorised three objectives: high quality of learning support, high quality of academic staff, and high quality of learning process. Measures in the learning and growth perspective are grouped to include high quality of the quality assurance system, high quality of planning, and high quality of staff development. In the financial perspective, measures are grouped into cost focus, revenue focus, and training and development focus. Cost focused measures should be minimised, while revenue focused measures should be maximised. For measures in development and training, the aim is to be optimised (not spend too much or too little). The measures in four perspectives of the Balanced Scorecard for university are summarised in Table 8.1.

Perspectives	Measures in each perspective
Customer	Quality of graduate
	1. Percentage of employment of graduate within one year
	2. Percentage of further studying of graduate within one year
	3. Percentage of graduate who receives the first class honour
	4. Percentage of graduate who completes the study within normal time
	Quality of research
	5. Number of publication per full time lecturer
	6. Internal research grant per full time lecturer
	7. External research grant per full time lecturer
	Quality of academic service to community
	8. Number of activity/project for academic service to community

Table 8.1 Measures in perspective in the Balanced Scorecard

Perspectives	Measures in each perspective
Internal process	Quality of learning support
	9. Number of computer per number of full time student equivalent
	10. Number of hour for library and computer service
	11. Number of computer network connection
	Quality of academic staff
	12. Percentage of lecturer who obtains doctoral degree or equivalent
	13. Student's opinion on lecturer's teaching efficiency
	14. Percentage of lecturers who possess academic position
	Quality of learning process
	15. Staff-student ratio
	16. Number of student's activity/project per total number of student
	17. Number of national and international award related to learning process
Learning and growth	Quality of quality assurance (QA) system
	18. Number of unit that passes the external quality assurance assessment
	Quality of planning
	19. Percentage of plan/project that follows the university's development plan
	Quality of staff development
	20. Number of staff-training hour
Financial	Cost focus
	21. Operating expense per number of full time equivalent student
	22. Percentage of staff salary per total operating expense
	23. Percentage of management staff salary per total operating expense
	24. Percentage of staff salary per total number of graduate
	25. Percentage of central administrative expense per total operating expense
	Revenue focus
	26. Percentage of total income per total operating expense
	Training and development focus
	27. Operating expense for academic staff development per total operating expense
	28. Operating expense for teaching and learning development per total operating expense

Table 8.1 Measures in perspective in the Balanced Scorecard (continued)

Putting measures into the four perspectives is not the end of the process of building the Balanced Scorecard. Measures should also consist of performance drivers and performance outcomes and must have the cause-and-effect relationships. In the Balanced Scorecard for a non-profit organisation, e.g. university, the financial perspective is not at the top of the Balanced Scorecard (Kaplan and Norton, 2001:134; Olve et al. 1999:304; Niven, 2003:33) because the financial success is not the primary objective of a not-for-profit organisation. Based on the model proposed

by Niven (2003:33), the cause-and-effect relationship must first start at organisation's mission and cascades down to customer, internal process, learning and growth, and finance respectively. The reason for putting the customer perspective at the top, rather than the financial perspective, is that everything a university does regarding to financial, revenues or other things is there to support the customers, or in this case, the graduates, research users, and community, which is closely related to mission of a university.

Thammasat University has a mission to be a high-level public academic and research institute, which aims to develop a high quality human resource, academic excellence, and knowledge at international level. Based on this mission, which is very similar to those of other public universities in Thailand, the strategy map for university can be created as shown in Figure 8.1.

8.2 EVA® for university

At the time of this study, although EVA® has been widely used in many companies, there is also no evidence in literatures that EVA® has been adopted as a management tool for university or any other type of not-for-profit organisation. This is not surprising as the term 'EVA®' refers to residual income and for a not-for-profit organisation, income or profit is not the goal of the organisation. However, even for a non-profit organisation like a university, financial income is still the important resource that can lead to the achievement of the objectives of university. Thus it is worth investigating the uses of the EVA® in totally new area, a not-for-profit organisation. However before presenting the model of EVA® for university, the concept of cost of capital, which is an important element in EVA® calculation, is firstly introduced.

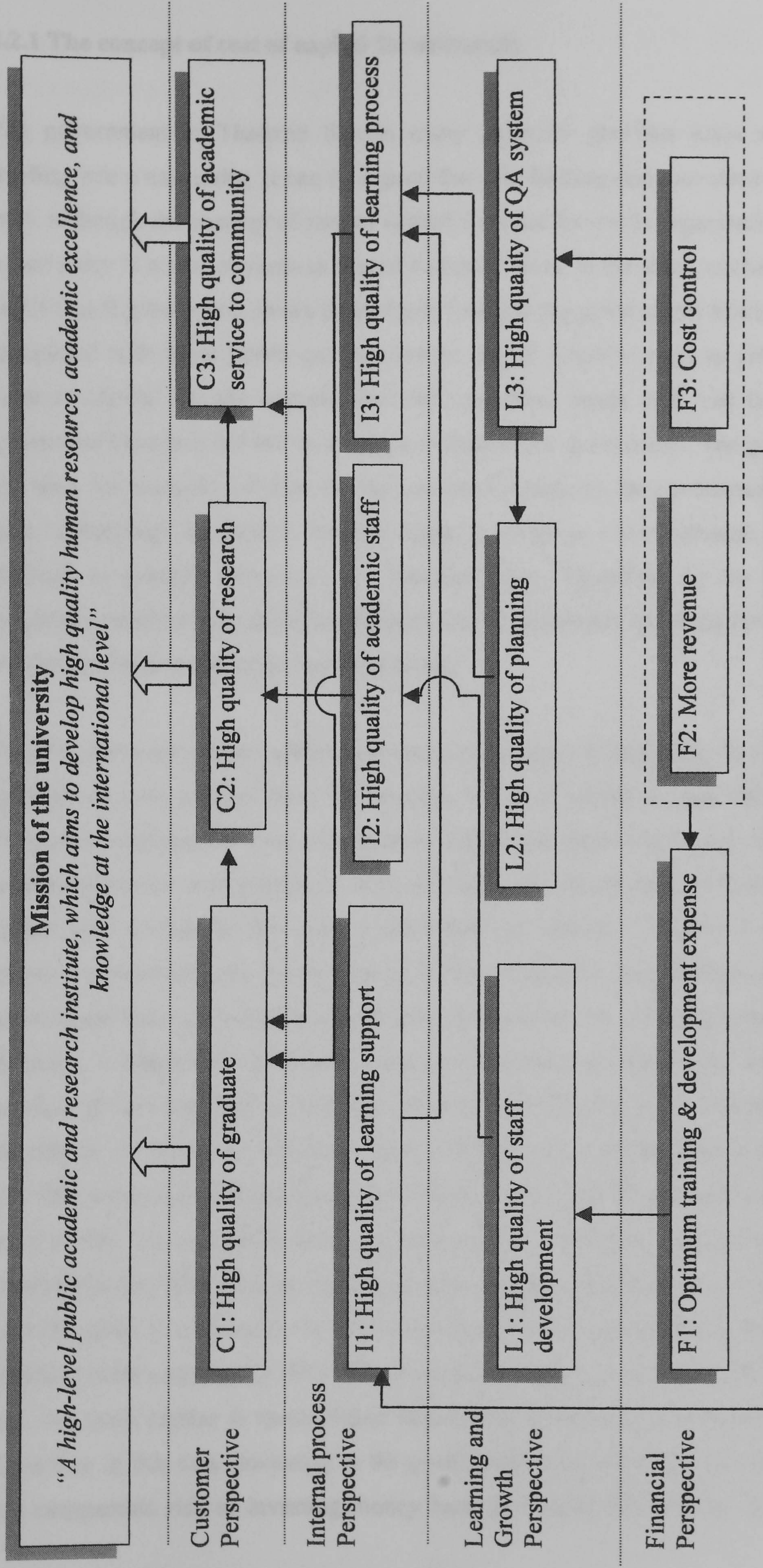


Figure 8.1 Strategy map of the university

8.2.1 The concept of cost of capital for university

The government in Thailand like in many countries provides main sources of funding into a university. It can be argued that this funding does not come without a cost. Although the concept of cost of capital for a not-for-profit organisation such as a university is not as obvious as that of company listed in the stock market, one can argue that if government raises those funds from issuing government bonds, interests associated with those bonds can be used as one of possible ways to calculate the 'cost of capital' for any organisation that uses those funds. It is true that issuing government bonds is not the only source of fund of the government. The government can also, for example, increase the tax rate but in doing so, the government needs to give 'something' in return to society. Again it comes as a cost although it is more difficult to quantify those costs in financial terms. Therefore, for the funding a university receives from the government it can be reasonably assumed that its cost is simply the interest rate of government bonds.

Funding does not always come from the government. A university itself can also generate its own income. Here the concept of cost of capital is more like that of a for-profit organisation. Cost of capital is simply an opportunity cost. Although a university has its own income, it does not mean that that income is 'free'. It again comes with a cost. In this case, a university has choices of where it can invest money. A university can simply deposit in the saving account in bank or buying the government bond or investing it back into its facilities. By investing it back into its facilities, it means that a university loses its opportunity to gain interest from a bank or from government bonds. Interest rates are therefore the cost of capital of this funding in this situation. However the cost of the loss of opportunity to invest into the other projects can be used as a cost of capital only if those projects have the same level of risk. For example it cannot be claimed that a university loses an opportunity to invest in the stock market, which earns in average 20% annually, as a result the cost of capital of a university is 20% or in other word, investing money back into its facilities costs a university 20%. This is not true because the risk of investing money into the stock market is much higher than investing money back into its facilities. Therefore in this case, investing in the government bond seems to be a project that has comparable risk as investing money back into its facilities. Actually it can be

even argued that it might be the same because finally the government will give those funding back to a university as described earlier. Therefore in this case, although the funding comes from its own generated income, its cost of capital can still be assumed to be equal to the interest rate of the government bonds. The Figure 8.2 illustrates the concept of the cost of capital for university.

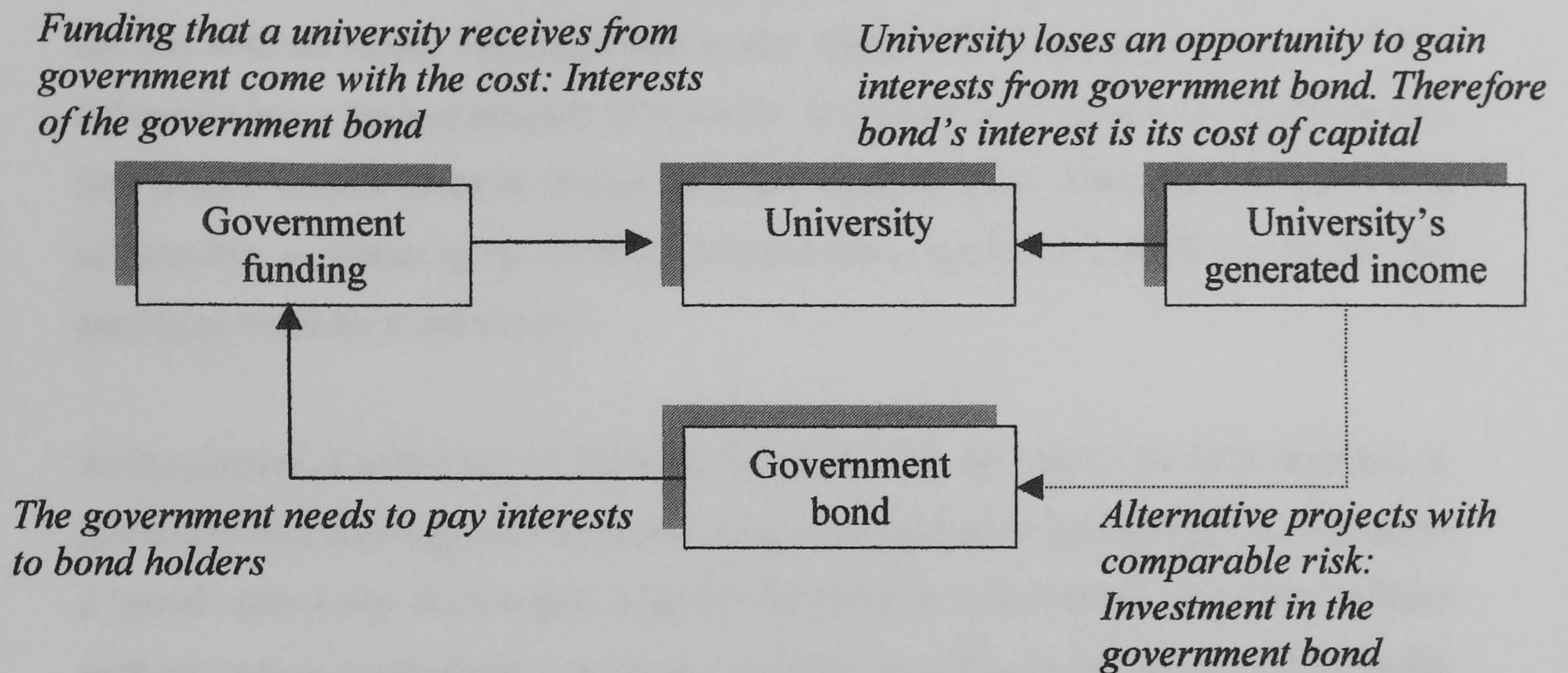


Figure 8.2 The concept of cost of the capital of university

Although this is not the one-hundred-percent accurate cost of capital of university, it is not as important as the concept that those capitals either from the government or from its own income are not free.

8.2.2 Application of EVA® for university

Referring to the original formula of EVA®

$$\text{EVA}^{\circledR} = \text{NOPAT} - \text{Capital Charge}$$

Where NOPAT is net operating profit after tax and capital charge is invested capital multiplied by a university's cost of capital

For not-for-profit organisation like a university, NOPAT seems to be irrelevant but capital charge is. For university, it is often seen in any ranking or league table that spending in information technology, library, and facilities are counted as one major

criteria to judge whether a university is better in term of learning support (O'Leary et al. 2004; Leach, 2004). However, it is questionable whether it is a good proxy of 'good learning support'. Investing in computer facilities for example does not always mean that students or other university stakeholders have a good learning support if very few people have an access to those facilities. One can also argue that a university that invests heavily in facilities and have good facilities is still better than the one without those. This argument is also questionable taking into account that a university has a limited amount of resource. If money is not spent into facilities that few people benefit from it, it can be better used in other areas such as providing scholarship to attract good students or increasing salary or benefit to recruit best people to work for a university.

At the present, a university in Thailand is judged only for size of its asset (capital). A university that has large size of assets or spending much in its facilities is considered a 'good' university. As a result, a university tends to spend much into their facilities without caring much about how those facilities are going to be utilised. This finally leads to low asset utilisation in some universities. Staff and students are also using facilities, as it is a 'free' resource. Staff will be happy to see computers and printers in their rooms even they do not use them. Students prefer more computers although the utilisation rate of the existing ones is still very low. University is very happy to see its ranking rise because of their spending into those unused facilities. This surely creates problems.

By applying the concept of EVA® in the way that every asset in a university has its associated costs, it creates a sense of 'leasing', staff are no longer happy to see computers and printers in their rooms if they do not use them. This is because those resources have the cost associated with them. Those staff are also responsible for those cost incurred if computers and printers are still in their rooms whether or not they are used. Students no longer ask for unnecessary resources because they might be charged for that since now a university is aware of its cost. A university is no longer happy to invest into 'anything' they want because by increasing the size of its asset, the capital cost is also increasing and if a university is also judged based on this cost, it will be very careful for its investment.

At this point, one can argue that if a university are measured in term of this cost of capital, a university will no longer invest in its facilities or even liquidate its assets as much as possible. This problem will never exist for a for-profit organisation because the capital cost is measured against net profit. Decreasing assets might have the effect on the profit. Therefore in a university context, the challenging question is ‘what should the capital cost be measured against?’

For a university, the objective is not to generate income. Its mission is to educate a student to become a good and proficient person in order to serve society. This is where the difficulty comes into the calculation. Measuring cost is easy task but measuring benefit in financial term will take much more effort. However there are still solutions to this problem.

First, the effort can be spent in order to identify the financial value of objectives of those units. For example if the objective of the academic programme is to educate students to become high quality graduates, then that can be measured, for example, in term of percentage of employment of graduate. Effort can be spent in order to find ‘financial value’ of the employment of graduate. It is always possible to find financial value on non-financial measures, and it has been done in for-profit organisations. Brand value, goodwill, and valuation of intangible assets are good examples. However difficulties still remain. Intangible assets can be valued in a company because there is a market to justify those values. For example, the difference between market value of the firm and its book value (value of tangible assets) can be a proxy measure of ‘value of intangible assets’ of the firm. Unfortunately, although it is not too difficult to find book value of a university, it is very difficult to identify the market value of a university. One possible way to find the market value of a university is to conduct research to ask the opinion of all university stakeholders in order to identify value of a university or financial value of benefit a university generates. However even experts will find it difficult to answer question like ‘what is financial value of high employment rate of graduates that is a proxy measure of high quality of graduate, which is one of a university’s objectives?’ This solution, although still possible, is however very difficult to achieve. It is also time consuming and its cost may be higher than its benefit.

Alternatively, a second solution is built upon the argument that it is not necessary to quantify the financial value of non-financial measures. Originally the idea to value non-financial benefit of a university into the financial term is based on the fact that in EVA® formula, two terms, NOPAT and capital charge, must be in the same unit otherwise it cannot be deductible. Mentioned earlier, the capital charge can obviously be calculated in financial term. However NOPAT is not the main objective of a university. Another mission, such as educating student, is the main goal. As a result, there is an attempt to value non-financial measure that reflects the mission of a university. It is actually because of the formula of EVA® that forces this conversion, which seems to be time and cost consuming activities.

Instead of spending much effort trying to quantify the financial value of non-financial measure, one can go back and consider the formula. Is there another way to calculate EVA®? The answer is probably yes although it may no longer be the traditional 'EVA®'. Coming back to the formula of EVA® calculation, one can rearrange it into the form of ratio of NOPAT and capital charge. In this sense, it can be called the Ratio of the Economic Value Added (Ratio of EVA®) instead of the 'Economic Value Added' as it is originally termed. In formula

$$\text{Ratio of EVA®} = \text{NOPAT} / \text{Capital charge}$$

The elements and details of calculation remain exactly the same as that of EVA® except the fact that these two terms are presented in term of ratio instead of the difference between the two. The meaning of the number is also changing. For EVA®, the surplus EVA® means a company is creating added value to shareholders (NOPAT is higher than capital charge) but in the term of the Ratio of EVA®, this happen when the ratio is higher than one. Therefore for the traditional EVA® the cut point is zero, while for the Ratio of EVA®, the cut point is one. It is the interpretation that is changed. The concept is remaining exactly the same as the traditional EVA®. The only weakness of the form of ratio is when denominator is zero but this will never happen in this case. Capital charge will never be zero because if it is zero, it means that a university does not have any capital or asset or it means that its cost of capital is zero, which it does not happen in either case.

Coming back to the case of a university, the main reason to adjust the formula of EVA® to become the Ratio of EVA® is to accommodate the calculation. Now it is obviously seen that the difference in units is no longer the limitation of calculation because it is in form of ratio. This will enhance capability of EVA® into nonfinancial sector. The numerator is no longer needed to be in financial term. It can be anything that reflects the goal of a university in the similar way that NOPAT reflects the goal of a for-profit organisation.

However the denominator in the calculation of EVA® for a university is different from that of the calculation of the traditional EVA®. In this case it is the capital charge plus the expenses associated to produce the outcome. For the traditional calculation of EVA®, NOPAT is the income minus the expenses then NOPAT is further reduced by capital charge to become EVA®. Therefore there are actually three terms in EVA® calculation: incomes, expenses, and capital charge. What a company needs is the higher EVA®, which means the higher incomes with the lower expenses and capital charge. But again, these terms in the traditional EVA® calculation are not in form of ratio, which there is no problem because they are all in financial terms and they can be deductible.

Therefore in a university context, in the calculation, there are also three elements, which are objectives of a university (equivalent to incomes for a company), expenses, and capital charge. These three elements are however in form of ratio by placing objectives of a university into the numerator and expenses and capital charge into the denominator. This is similar to the calculation of the ratio of EVA® but it is more academic related. It is therefore called the 'Academic Value-added Ratio' (AVAR) instead. In formula

$$\text{Academic Value-added Ratio (AVAR)} = \frac{\text{Objective of a university}}{(\text{Expenses} + \text{Capital charge})}$$

AVAR is therefore able to answer question raised before. Now a university cannot simply liquidate or decrease its asset or capital without considering the output. By decreasing its asset, although capital charge is less, it might considerably affect the objective of a university and AVAR will never be improved. Although AVAR seems to be very similar to other productivity measures, i.e. measures of output and input. It

differs than those measures because it applies the concept of capital charge. The measures like number of graduates (output of a university) divided by operating expenses are one of common measures for a university. However a university can manipulate this measure easily by investing into the assets that can reduce operating expenses and produce the same outcome. For example if a university is currently leasing computers for staff and students, leasing expense is then considered one of the operating expenses. As a result, in order to increase such productivity measure (in this case number of graduate per operating expense), a university can simply invest in computer facilities by buying computers instead of leasing. Although there is cost of buying such as administrative expenses, cost of leasing is much more than cost of buying, because it also includes administrative expenses of leasing and cost of leasing itself. Thus the decision to buy instead of leasing will decrease the operating expense and produce impressive number of that productivity measures. A university will also obtain good acknowledgement of having a good 'learning facilities' by simply looking at computer spending. By changing from leasing to buying computers, it affects that measure in much better way for a university. As a result, it is not surprising to find that a university tends to 'buy' things rather than to 'lease' them. However if AVAR is used as a performance measure, it now does not matter whether a university will lease or buy a computer. The decision will still affect the denominator of the calculation whether it is operating expense or capital charge. A university will buy computers only if the capital charge is less than the leasing expense. This is wise decision because less capital charge means computers are cheap enough to buy (less capital investment) instead of leasing.

At this point one can argue that investment in computer facilities also generates higher depreciation expenses, which is also considered as one of operating expenses. Therefore investment option might be less attractive than leasing option because it increases both capital charge and operating expense. However normally leasing cost also includes the cost of depreciation of assets. Thus the effect of depreciation is not different between the two options.

The numerator now can be anything that reflects university's objective. It can be number of graduate who is employed after graduation (reflecting quality of graduate) or number of publication in top-rated journal (reflecting quality of research). By

applying AVAR, the best university is no longer the university that spends much but it is the university that spends less and obtains impressive outcomes such as high quality of graduates and researches.

The problem that still remains is that a university must have a process of allocating its capital into each of objective. In other words, capital charge and operating expense in denominator must be the ones that are used to produce the outcome in numerator. Although it seems difficult, many universities already have the process of cost allocation into each activity such as teaching and research. This also includes the allocation of its assets. Thus the calculation of AVAR becomes possible.

One possible argument left is that a university that invests less and obtains poor outcome can have the same AVAR as the other university that invests much and obtains good outcomes. Obviously the latter is more preferable. To attack this problem, AVAR should therefore be implemented with other method that controls the quality of outcome. The Balanced Scorecard is the main candidate for such method. The combination of these two tools will be a very powerful management tool for a university. The combination of these methods is discussed in the next topic. In conclusion, by using AVAR, a university will be able to allocate its resources properly in order to be able to achieve its missions with less spendings.

8.3 Combination of two models

A model plays different roles at different levels of the organisation. At the top levels, models are used to provide information in the form of results and insights (descriptive model), while at the lower levels, models are used to provide recommended decision (predictive model) (Moore and Weatherford, 2001:6). In this thesis, the model is designed for high level of management in university. Thus the model created is more descriptive than predictive.

There are number of ways to design the model. In general the model is used to recommend management a course of action to supplement the use of intuition in decision making (Moore and Weatherford, 2001:5). It involves abstracting

management situation into model, analysing model, and interpreting the results of the model to make better decisions. The modeling process is illustrated in Figure 8.3.

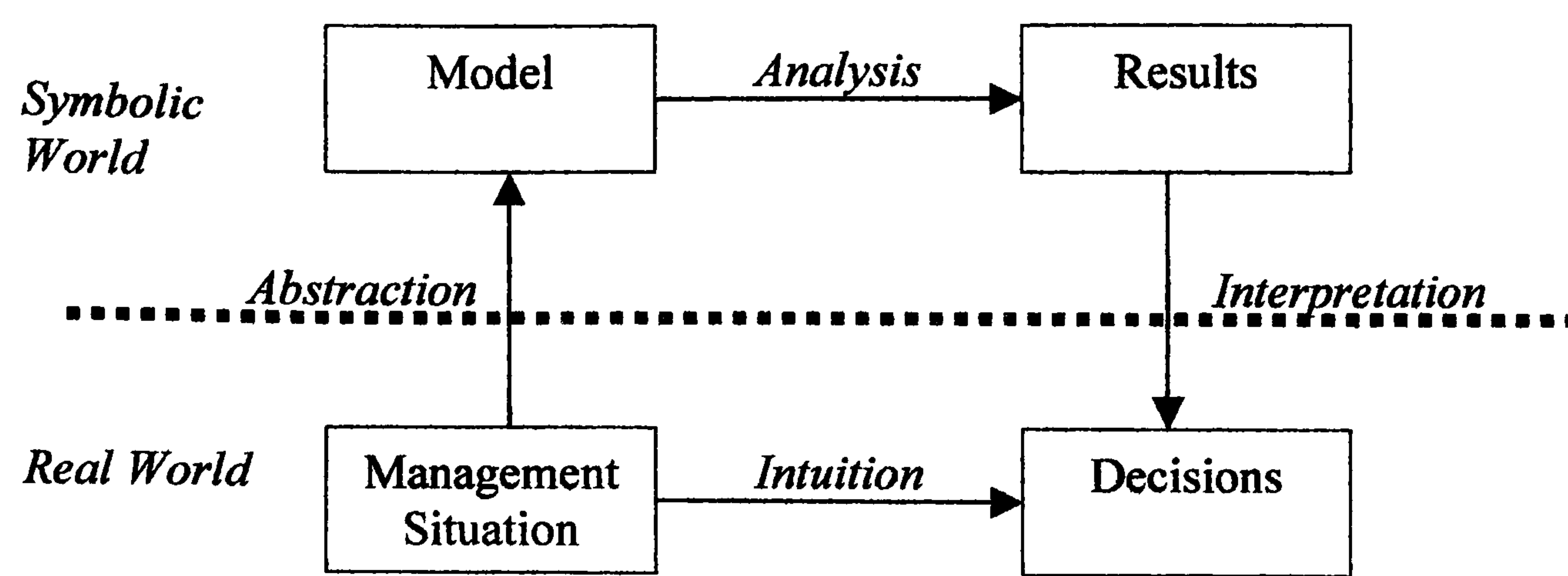


Figure 8.3 The modeling process

Source: Adapted from Moore and Weatherford (2001:5)

In this chapter, the main focus is to explore the process of the design of the model. The outcome is the proposed model, which is then evaluated in the next chapter.

As previously described, the Balanced Scorecard, with the established strategy map of a university can inform the cause and effect linkage between the strategic objectives and provides the clear picture of how a university can reach its mission. The good financial management can improve learning and growth of a university, which in turn enhances the capability of internal business process and then leads to the better performance in customer perspective and finally to the achievement of its mission. The Balanced Scorecard helps management know the areas that are strategically important to a university. On the other hand, EVA® for university (AVAR) measures the effectiveness and efficiency of the money invested to produce good outcomes of university.

These two tools, the Balanced Scorecard and EVA® however also have its own limitations when implementing at university. The Balanced Scorecard incorporates many measures in four perspectives. Thus it becomes difficult especially for the government who is main financial provider to judge the performance of university. It is also difficult to compare the performance among universities since there is no single standard measure. In a for-profit organisation, the measure of net profit is the

obvious example. Although a firm has many financial and nonfinancial measures, at the end, it is judged based on its net profit. Investors know exactly whether a firm is making money and worth investing in. In this sense, for a non-profit organisation like a university, the adjusted EVA® or AVAR can be used as a single outcome measure.

On the other hand, if the AVAR is used alone. It becomes impossible to track the cause and effect since the AVAR is only a lagging indicator. Here the Balanced Scorecard can be used to provide more holistic view of the performance of university. University that has poor AVAR can track the cause and effect in its strategy map and knows where its strengths and weaknesses are. Thus it knows how to improve its AVAR.

By considering the advantages and limitations of these two management tools, it becomes obvious that EVA® and the Balanced Scorecard should be incorporated into one model as implementing either the Balanced Scorecard or EVA® alone will generate some problems as previously described.

To combining these two models, the Balanced Scorecard is used as a tool to diagnose a performance of university. The improvement in financial perspective (input) leads to better learning and growth perspective. This then leads to excellence in internal business process, which finally satisfies all university's stakeholders in customer perspective. All of this achievement should lead to high AVAR, a single outcome measure of university.

Since there are three main objectives of university in customer perspective (top perspective in the university's Balanced Scorecard), which are high quality of graduate, high quality of research, and high quality of service to community, to produce a single measure, these measures must be combined. One possible way to combine three measures into one is to apply weight into each measure. This is the area of management decision and there are several ways to determine the weights. In Simple-attribute Rating Technique (SMART) and SMART Exploiting Ranks (SMARTER) (Goodwin and Wright, 2004), weights can be determined by

1. Weights that reflect importance to the decision maker
2. Swing weights that compare 'a change (or swing) from the least-preferred to the most-preferred value on one attribute to a similar change in another attribute. (Goodwin and Wright, 2004:40)
3. Ranking swing weights and using rank order centroid to specify the weight (Goodwin and Wright, 2004:51).

The senior management in university can then identify the weights using this method and thus the objective of university can be presented in a single measure, which can be called the mission achievement index.

Note that there are also more than one measure for each objective in customer perspective, i.e. there are three measures for quality of research. Thus the SMART and SMARTER techniques can also be used to assign weight into these measures in order to combine these measures into a single measure, i.e. research index. Then SMART and SMARTER can be used to assign weight into this index again to construct the final single outcome measure, the measure of mission achievement as described earlier.

After a measure of mission achievement is identified, to find the AVAR, a university needs to find the total operating expenses and capital charge. Both of these numbers are easily identified in the university level. Operating expenses have already been recorded for an entire university, while capital charge can be calculated using the cost of capital (bond interests) and invested capital, which is mainly the fixed assets of university. Then the AVAR is simply the ratio of a single measure of objective of university and the total operating expense plus capital charge. The proposed combined model of EVA® and the Balanced Scorecard is shown in Figure 8.4.

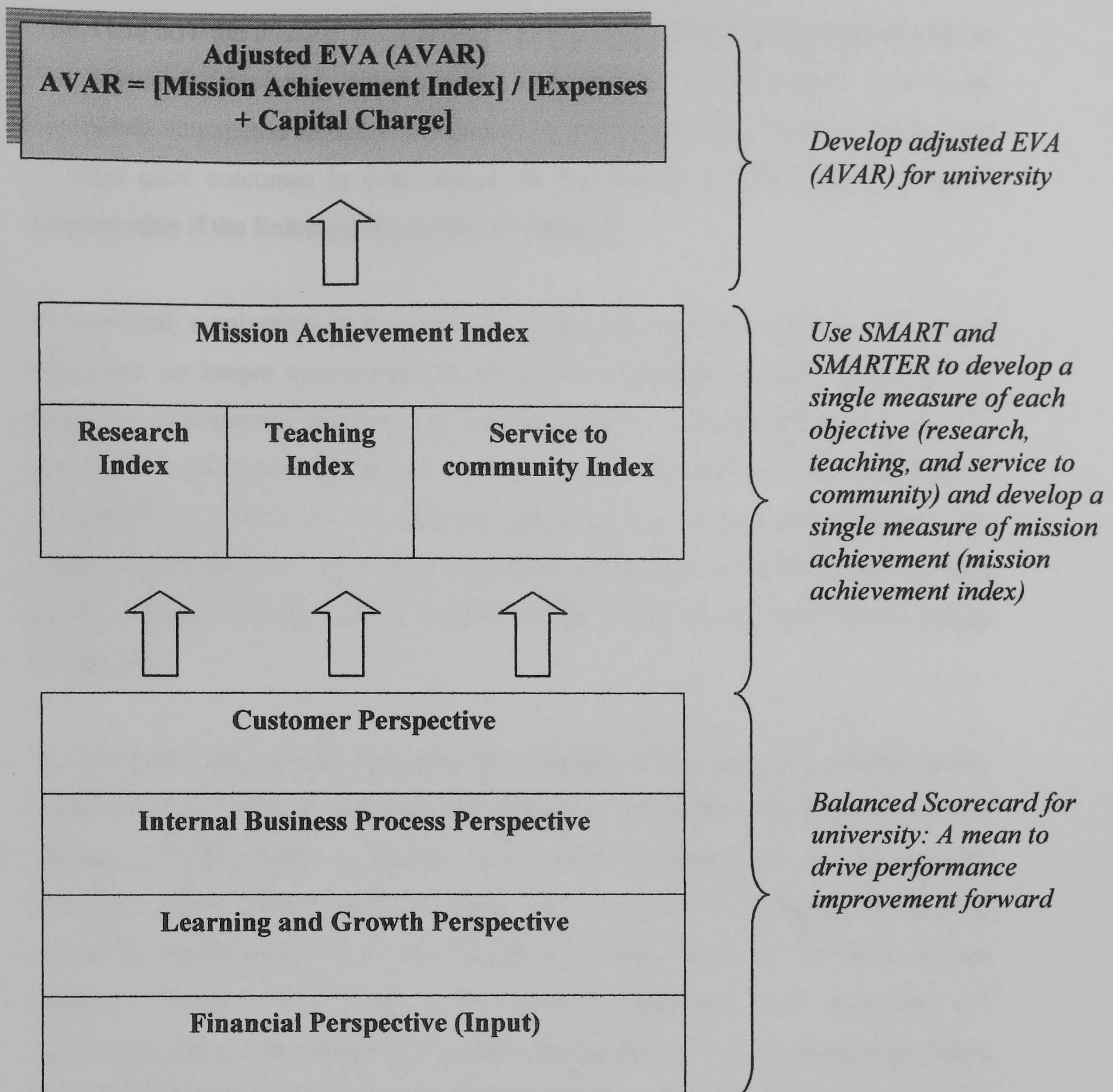


Figure 8.4 The proposed model

By combining the two models, limitations of adjusted EVA® (AVAR) and the Balanced Scorecard are now addressed. While AVAR are used as a single outcome measure for university, which helps the government judge and compare performance among universities, the Balanced Scorecard can be used as a tool to drive AVAR. A university then has a single focus, like a firm has a net profit, while still does not lose control on any other important areas.

With the Balanced Scorecard, management now know which area is strategically important to a university. It helps management know how one objective affects the

others and how the mission of university can be achieved through the strategy map in the Balanced Scorecard. Additionally, a university cannot simply reduce the investment or expense in order to increase its AVAR because it will definitely lead to other poor outcomes in other areas via the cause and effect chain, which is unacceptable if the Balanced Scorecard is in place.

With AVAR, a university now realises that every asset has its associated cost. Thus a university no longer over-invests in assets that might not produce good enough outcomes. A university will then use limited available funding efficiently to produce the desired outcomes. While the Balanced Scorecard indicates the area that is strategically important, AVAR indicates the proper level of investment in each area. Under investment can lead to poor outcome, while over investment leads to high capital charge. In both cases it lowers AVAR. Thus AVAR can lead to proper investment.

In conclusion, this model illustrates the concept of virtuous and vicious cycles. Virtuous cycle refers to processes that reinforce movement in a desired direction (Senge, 1990:81), while a vicious cycle results in movement in the opposite direction, where 'things start off badly and grow worse' (Senge, 1990:81). If university invest wisely by using AVAR as a main focus, it will have enough funding to improve every area in the Balanced Scorecard. Thus university will continue to achieve its mission and produce impressive AVAR for a long run. This is the example of the virtuous cycle. On the other hand, if university over or under invests into a particular area, it will produce poor AVAR. By over investing, there will be no funding left for investment to improve quality of objectives in the Balanced Scorecard. On the other hand by under investing, quality of objectives is certainly not improved. Sooner or later, this will affect every strategic objective in the Balanced Scorecard and lead to poor quality of education. University will finally not achieve its mission and the reputation of university is then deteriorated, which leads to poorer AVAR. This example shows the occurrence of vicious cycle.

In the next chapter, this proposed model is evaluated. The perceived value of EVA® and the Balanced Scorecard is also discussed and implementation strategies are also explored.

CHAPTER NINE: THE EVALUATION AND IMPLEMENTATION OF THE NEW MODEL

Previous chapter shows the process of design of the new model. In this chapter, a proposed performance measurement model for the University is evaluated. Similar to concepts presented in previous chapter, the main focus of this chapter is to illustrate the process of evaluating the proposed model. In this chapter, the implementation strategies are also established based on the perception of staff in Thammasat University, other public universities, the related government agencies, and foreign universities. This addresses the final research question “*How is the new model to be successfully implemented in public universities in Thailand?*”

This chapter is then separated into four main parts as follows.

1. *The evaluation of the new model.* This part attempts to present how the model can benefit a university. In this part, the new model is compared to the other models currently applied in other universities.
2. *Implementation of the new model.* This part aims to answer the final research question. The results from the interview and questionnaire in the survey are analysed and reported.
3. *Perceptions of staff on the new model.* The objective of this part is to investigate the perception on the uses of the model from the staff in Thammasat University, where the model is created, other public universities in Thailand, where the model is expected to be used, the related government agencies, which currently monitor the performance of all public universities in Thailand, and foreign universities that are currently adopting the Balanced Scorecard approach. Opinions from key informants and staff within these universities on the appropriateness of the model is also gathered and analysed. These opinions are very useful as they improve the usefulness of the model, and at the same time enhance the validity of results of the study described in the previous chapter. Furthermore, by being consulted in, and contributing to the new model, staff are more likely to accept ownership of the new system, and it is more likely to be

successful as stated in managing change issues previously described in section 5.5 in Chapter Five. The perceived value of the EVA® and the Balanced Scorecard is also discussed in this section.

4. *Quality of survey research.* This final part includes the topic of validity and reliability of the survey research to ensure that what is found is reliable and valid.

9.1 The evaluation of the new model

In this section, the proposed model is compared to what has been done in other universities. The concept of applying the Balanced Scorecard to a university is increasingly popular among academic researchers, and there are many related studies including the uses of the Balanced Scorecard. Examples include application at university level (Stewart and Carpenter-Hubin, 2000; Lawrence and Sharma, 2002; Ruben, 1999), at academic department level (Haddad, 1999; Bailey et al. 1999; Chang and Chow, 1999), for university research (Pursglove and Simpson, 2000), for university teaching (Southern, 2002), for internal service providers in a university (Pursglove, 2002), and for university financial management (Pursglove and Simpson, 2001). Not only is the concept of the Balanced Scorecard widely praised among academic researchers, it is also being increasingly applied in universities.

According to results of the survey on the uses of the Balanced Scorecard for a university by submitting questionnaire to management staff in twenty-nine universities that use or are mentioned to use the Balanced Scorecard as shown in the list of the potential Balanced Scorecard universities presented in Table 6.11 in Chapter Six, the results show that there are only nine universities that confirm its use. Two universities deny that it does not implement the Balanced Scorecard. One university indicates that it used to implement the Balanced Scorecard but it has stopped and for one university, according to the response from the respondent, it is not certain whether the university has implemented the Balanced Scorecard or not.

Where questionnaires are not returned, thirteen universities present their Balanced Scorecard in their websites. However for other three universities, there is no evidence of its use in their websites. The list of twenty-two universities that apply

the Balanced Scorecard based on the responses from questionnaires and evidence found in the websites is shown in Table 9.1.

Seventeen of these universities are located in the United States, two universities are in United Kingdom, two universities are in Australia, and one in Canada. For their implementation, eleven universities apply the Balanced Scorecard only to their supporting units such as business and administration service division or campus auxiliary service. Eight universities apply the Balanced Scorecard for the whole university. Three universities apply it to the library.

It is noticeable from the results that most universities especially those in the United States apply the Balanced Scorecard only to the supporting units not the academic department or the whole university. An explanation for this may be that the Balanced Scorecard is found to be more popular for commercial business. As a result, it is firstly put into the test at commercial side in a university, in other word to the for-profit parts.

In order to benchmark the model proposed in this study, two universities are selected; the University of Edinburgh in United Kingdom and the Chiang Mai University in Thailand. These were selected because they apply the Balanced Scorecard to the whole university, which is similar to the proposed model. The University of Edinburgh has recently established the Balanced Scorecard and there is sufficient data available. It can therefore be a good example to compare to the proposed model. On the other hand, the Chiang Mai University is the only Thai university that currently applies the Balanced Scorecard technique. It is therefore chosen and analysed in details because the context of the university is similar to those of other public universities in Thailand, which are the expected primary users of the model created in this study.

University	Country	Unit that implements the Balanced Scorecard	The use of the Balanced Scorecard is confirmed by
1. University of California at San Diego	US	Business Affairs	Document in website
2. University of California at Davis	US	Division of Administration	Document in website
3. University of California at Berkeley	US	Business and Administration Services Division	Returned questionnaire
4. University of California at Los Angeles	US	Administrative Information System, Business Administration Service	Document in website
5. University of California at Irvine	US	Division of Business and Administration Services	Document in website
6. University of California at Santa Cruz	US	Business and Administration Service	Returned questionnaire
7. University of California at San Francisco	US	Campus Auxiliary Services	Document in website
8. California State University at Northridge	US	Administration and Finance	Returned questionnaire
9. California State University at San Marcos	US	Finance and Administrative Service	Returned questionnaire
10. California State University, San Bernardino	US	Administration and Finance	Document in website
11. Florida International University	US	Whole university	Document in website
12. University of Louisville	US	Whole university	Document in website
13. University of Vermont	US	Whole university	Document in website
14. University of Akron	US	Whole university	Returned questionnaire
15. University of Virginia	US	Library	Document in website
16. Fort Heys State University	US	Whole university	Returned questionnaire
17. University of Florida	US	Library	Document in website
18. University of Edinburgh	UK	Whole university	Document in website
19. Glasgow Caledonian University	UK	Whole university	Returned questionnaire
20. Deakin University	Australia	Library	Document in website
21. Bond University	Australia	Whole university	Returned questionnaire
22. Carleton University	Canada	Finance and Administration	Returned questionnaire

Table 9.1 A list of universities that currently apply the Balanced Scorecard

9.1.1 The Balanced Scorecard in the University of Edinburgh

The University of Edinburgh's first Balanced Scorecard was completed in January 2004. It is used as an internal management tool that consists of a set of performance indicators that reflect performance against their strategic goals. The performance indicators used in the Balanced Scorecard are calculated at the university-level to assist management in monitoring the overall performance of the university.

The perspectives in the University's Balanced Scorecard are however different that that of traditional Balanced Scorecard proposed by Kaplan and Norton (1992). In the University's Balanced Scorecard, there are four perspectives as follows (The University of Edinburgh, 2004).

1. Organisation development perspective. The objective of this perspective is to sustain 'a dynamic institutional profile' (The University of Edinburgh, 2004).
2. Stakeholder perspective. The objective of this perspective is to attract 'high calibre students from a broad range of backgrounds to an institution nationally and internationally respected by peers, staff, and the public' (The University of Edinburgh, 2004).
3. Internal business perspective. The objective of this perspective is to consistently 'support the University in achieving its mission and strategies' (The University of Edinburgh, 2004).
4. Financial perspective. The objective of this perspective is to use 'resources in a cost-effective manner to further strategic aims' (The University of Edinburgh, 2004).

Although the University of Edinburgh starts using the Balanced Scorecard in January 2004, reports of the data of these indicators are available back to academic year 1999-2000. The University of Edinburgh does not only measure its performance in four perspectives, it also performs external comparative analysis. Each indicator is benchmarked against other universities such as the University of Glasgow, the

University of Manchester, the University of Cardiff, and the University College London. These universities are selected because they are similar in size and teaching and research pattern. Furthermore all of these universities are located in the United Kingdom, which make it comparable in term of culture and environment. The benchmarking assists the university to establish realistic goals (The University of Edinburgh, 2004).

At the time of the study, the University is retrospectively applying the Balanced Scorecard in order to allow the establishment of a time series of performance measurement. This will help test the validity of the chosen measures. The University also intends to retain its current indicators for several years, which will allow the University to determine trends over time.

In conclusion, the University of Edinburgh expects to use the Balanced Scorecard as a management tool to assist senior management of the University to make better decisions, to ensure that the strategic objectives and mission of the University are met, and to conform to government policies.

Performance measures in each perspective of the University of Edinburgh's Balanced Scorecard are shown in Table 9.2.

9.1.2 The Balanced Scorecard for the Chiang Mai University

Chiang Mai University is the first university to implement the Balanced Scorecard in Thailand. A Balanced Scorecard for Chiang Mai University was implemented several years ago, but the University is still in the developing phase. Based on the document obtained from one of senior management staff of the University, it is interesting to find that the Chiang Mai University's Balanced Scorecard is very different from the traditional Balanced Scorecard proposed by Kaplan and Norton (1992). In the Balanced Scorecard for the Chiang Mai University, there are seven perspectives, which are government, financial, customer, image, process, learning and growth, and management perspective. The performance measures for each of these seven perspectives are shown in Table 9.3.

Perspective	Measures
Organisational Development Perspective	<ol style="list-style-type: none"> 1. Shape of student population <ul style="list-style-type: none"> • Proportion of full-time Undergraduates from Scotland • Number of Research Postgraduate students • Fee income from Taught Postgraduate students • Lifelong Learning registrations 2. Interdisciplinary of curriculum 3. Research grant applications submitted per annum per member of academic staff (Academic and Clinical) 4. Proportion of new appointments to Chairs who are women 5. Headcount of staff development attendees 6. Number of staff on fixed term contracts as percentage of all staff employed
Stakeholder Perspective	<ol style="list-style-type: none"> 1. International Student Headcounts 2. Proportion of students achieving a First or Upper Second class degree 3. Widening participation: Proportion of students from state schools/colleges 4. Intake of home/EU students from ethnic minorities as percentage of total intake of home/EU students 5. Newspaper cuttings analysis: Percentage of column centimetres positive 6. Percentage of academic staff in 5 and 5* RAE units of assessment
Internal Business Perspective	<ol style="list-style-type: none"> 1. Number of full-time students per open access computing seat 2. Percentage of library stock issued by self-service 3. Proportion of central committees with an online service for members and the proportion of papers available online from these committees 4. Total income per square metre of gross internal area 5. Capital expenditure and planned maintenance as percentage of estate value 6. Total property cost as percentage of University total income 7. Backlog maintenance spend required for the University to comply with the Disability Discrimination Act 8. Room utilisation
Financial Perspective	<ol style="list-style-type: none"> 1. Percentage of total income from non-formulaic funding sources 2. Historic cost surplus as percentage of turnover 3. Administrative operating costs as percentage of academic operating costs 4. Research indirect cost recovery contribution as percentage of total research income 5. Commercialisation of research (number of activities) 6. Fund raising 7. Current assets per current liabilities 8. Average annual cost of a full-time equivalent staff member 9. Utilities, maintenance, and servicing costs per square metre

Table 9.2 The Balanced Scorecard of the University of Edinburgh

Source: The University of Edinburgh (2004)

Perspective	Measures
Government perspective	<ol style="list-style-type: none"> 1. Responsiveness to the government's policies <ul style="list-style-type: none"> • Number of project that responds to government's policies • Number of new project that generates revenue to community
Financial perspective	<ol style="list-style-type: none"> 1. Increase of revenue <ul style="list-style-type: none"> • Revenue or donation • Research grant from government budget • Other research grant • Research grant related to religion, art, and culture 2. Financial self-sufficiency <ul style="list-style-type: none"> • Endowment • Revenue per government budget • Intellectual property
Customer perspective	<ol style="list-style-type: none"> 1. Student and employer satisfaction <ul style="list-style-type: none"> • Average entrance examination score • Employer satisfaction • Graduate satisfaction 2. Academic service user satisfaction <ul style="list-style-type: none"> • Increase in number of user • Number of user in service related to study in religion, art, and culture
Image perspective	<ol style="list-style-type: none"> 1. Academic excellence image <ul style="list-style-type: none"> • Ranking of the University based on student selection • Number of time that staff are invited to participate in academic event in the country or abroad • Awareness of target group in education and academic position of lecturer, number of publication, number of patent, number of award, and living and environment research
Process perspective	<ol style="list-style-type: none"> 1. Research <ul style="list-style-type: none"> • Number of research • Number of research that receives patent • Number of textbook that is created from research 2. Teaching <ul style="list-style-type: none"> • Percentage of employment and further studying of graduate within one year after graduation • Percentage of library expense to total budget • Number of book in library • Percentage of subject that is taught with new technology 3. Academic service and preservation of art and culture <ul style="list-style-type: none"> • Number of new project • Number of time that staff are invited to disseminate knowledge in public media • Number of staff who provide consultation to organisation • Percentage of student that passes the subject that is related to religion, art, and culture

Table 9.3 The Balanced Scorecard of Chiang Mai University

Perspective	Measures
Process perspective (continued)	4. Quality assurance <ul style="list-style-type: none"> • Number of unit that has quality assurance system 5. Expense control <ul style="list-style-type: none"> • Number of defect found from auditing by internal audit unit 6. Budgeting <ul style="list-style-type: none"> • Effectiveness of spending 7. Information system <ul style="list-style-type: none"> • Number of unit that has the completed and modern information system 8. Knowledge and image 9. Number of project that is related to public relation of image
Learning and growth perspective	1. Learning staff <ul style="list-style-type: none"> • Proportion of education of lecturer (Bachelor's: Master: Doctoral) • Proportion of academic position of lecturer (Lecturer: Assistant Professor: Associate Professor: Professor) • Number of expertise • Number of trainer 2. Teamwork <ul style="list-style-type: none"> • Number of staff on leave • Number of completed team-based project • Percentage of increasing extra revenue of staff
Management perspective	1. Policies, plans, and strategies <ul style="list-style-type: none"> • Opinions from person who has authorisation • Number of achieved plan • Efficiency of project management • Quickness of service 2. Good governance <ul style="list-style-type: none"> • Number of conflict in organisation • Number of fraud • Number of customer complaint • Number of staff complaint • Damage from fraud or shortcoming of responsibility • Number of staff who have high morale • Disclosure of regulation and management process • Control and evaluation system

Table 9.3 The Balanced Scorecard of Chiang Mai University (continued)

Measures in each perspective are interrelated. The Chiang Mai University has also constructed a strategy map. However in the strategy map, the perspectives are not clearly identified. The map consists of many linkages between objectives from each of seven perspectives.

9.1.3 The perception of staff at Chiang Mai University on the implementation of the Balanced Scorecard

Eighty-six questionnaires were distributed to staff in Chiang Mai University to investigate the driving and restraining forces of the implementation of the Balanced Scorecard, critical success factors, and the satisfaction of the uses of the Balanced Scorecard.

Out of eighty-six questionnaires distributed, thirty-seven questionnaires are returned. The response rate is therefore 43%. The demographic data of respondents is summarised in Table 9.4 as follows.

Highest Education	%	Type of staff	%	Academic position	%
Bachelor	5.4	Academic	86.5	Lecturer	5.4
Master	48.6	Non-academic	13.5	Assistant Professor	16.2
Doctoral	43.2			Associate Professor	59.5
Unidentified	2.8			Professor	5.4
				Non-Academic	13.5
Total	100		100		100

Table 9.4 Demographic data of the respondents from Chiang Mai University

By performing cross tabulation, it is found that the largest group of the respondents in this survey of staff in Chiang Mai University is the academic staff who have the management position, obtain the master degree as their highest education, and possess the academic position of Associate Professor.

The results reveal that the main driving forces of the implementation of the Balanced Scorecard for Chiang Mai University include increasing competition among universities, new established government’s rules and regulations regarding to the performance measurement of university, and limited translation of strategy into action. For the main restraining forces of the implementation of the Balanced Scorecard, the respondents indicate that restraining forces include data insufficiency, more workload, and no support from senior management. Results also reveal that the critical success factors of the implementation include senior management commitment, good communication, i.e. not keeping scorecard only at the top, and involvement of staff. Table 9.5 illustrates the driving forces, restraining forces, and

critical success factors of the implementation of the Balanced Scorecard at the Chiang Mai University. Note that the highest score of 5 means that there is strong agreement.

Driving forces	Score	Restraining forces	Score	Critical success factors	Score
Competition among universities	4.16	Data insufficiency	4.34	Senior management commitment	4.70
New established government's regulations	4.14	More workload	3.60	Not keeping PMS only at the top	4.68
Limited translation of strategy into action	3.83	No support from senior management	3.54	Involvement of staff	4.65

Table 9.5 Driving forces, restraining forces, and critical success factors of the implementation of the Balanced Scorecard at Chiang Mai University

The results further reveal that staff are very well aware of the implementation of the Balanced Scorecard in Chiang Mai University and also know what the Balanced Scorecard is. They are not satisfied with the previous performance measurement system and prefer the Balanced Scorecard to the previous system. Table 9.6 presents the results of the awareness, knowledge, and satisfaction of the Balanced Scorecard. Note that the maximum score of 5 means staff are very much aware of the implementation of the Balanced Scorecard, very well know what the Balanced Scorecard is, and very satisfied with the system. Score less than 3 in the satisfaction level means staff are less than satisfied with the system.

Topic	Score (Out of 5)
The awareness of the Balanced Scorecard in the University	3.71
The knowledge of the Balanced Scorecard	3.97
The satisfaction of the previous performance measurement system	2.81
The satisfaction of the Balanced Scorecard	3.47

Table 9.6 Awareness, knowledge, and satisfaction of the Balanced Scorecard in Chiang Mai University

In conclusion, staff in the Chiang Mai University are very satisfied with the implementation of the Balanced Scorecard. The communication of the Balanced Scorecard seems to be effective, as most respondents know what it is and are aware of its implementation.

9.1.4 Conclusions of the comparison between the new model and models from other universities

From two Balanced Scorecard models from the University of Edinburgh and the Chiang Mai University, it can be obviously seen that there are differences between those two models. However it cannot conclude that which model is better because each university is unique in its missions and environment. Nevertheless these two examples provide good information as they can be used to compare to the proposed model in this study. The objective of the comparison is to find the similarities and differences between the proposed model and other models used in other universities. The comparison of the model is presented in Table 9.7.

Characteristics of the model	The proposed model	University of Edinburgh's	Chiang Mai University's
Perspectives	Four perspectives: customer, internal process, learning and growth, financial	Four perspectives: organisational development, stakeholder, internal business, financial	Seven perspectives: government, financial, customer, image, process, learning and growth, management
Measures	Total: 28 measures <ul style="list-style-type: none"> • Customer – 9 • Internal process – 9 • Learning and growth - 3 • Financial - 8 	Total: 32 measures <ul style="list-style-type: none"> • Organisational development – 9 • Stakeholder – 6 • Internal business – 8 • Financial – 9 	Total: 52 measures <ul style="list-style-type: none"> • Government – 2 • Financial – 7 • Customer – 5 • Image – 3 • Process – 16 • Learning and growth – 7 • Management - 12
Linkage between objectives	Yes	No evidence	Yes
Benchmarking	Not included	Yes	No evidence
Single outcome measure	Yes (AVAR)	No evidence	No evidence

Table 9.7 Comparison between the proposed model and other Balanced Scorecard models from other universities

From Table 9.7, although there appear to be some differences, but there are also similarities in those differences. In number of perspectives, the proposed model has four generic Balanced Scorecard perspectives: financial, customer, internal process, and learning and growth. This is very similar to the model of the University of

Edinburgh. The University of Edinburgh's model also consists of four perspectives, and although the names are different, the contents are similar. The two similar perspectives include internal business and financial perspectives, while two different perspectives include organisation development and stakeholder perspectives. However the differences are only in name, the contents are similar. The stakeholder perspective is equivalent to the customer perspective in the proposed model, while the organisation development perspective is equivalent to the learning and growth perspective in the proposed model. In the model of the Chiang Mai University, there are seven perspectives signposting differences. However if those perspectives are grouped together, similarities can be found. The grouping can be shown as follows.

1. Government, customer, and image perspectives can be grouped into customer (or stakeholder) perspective.
2. Process and management perspectives can be grouped into internal process perspective.
3. Learning and growth perspective is similar to those of the proposed model and model of the University of Edinburgh
4. Financial perspective is again similar to those two models

In conclusion the perspectives used in the proposed model are similar to those of the other universities, although the names are different. However argument can be made that if the perspectives in these two universities are generic, why do these universities establish the new perspectives? To answer this question, six in-depth interviews are conducted to senior management staff at the Chiang Mai University. It can be concluded from the results of the interviews that in case of Chiang Mai University, the seven perspectives are also originally developed from four generic perspectives proposed by Kaplan and Norton (1992). This explains why it can be collapsed down to the same headings as previously suggested. The interviewees also suggest that the number of perspective is not as important as the linkage between the objectives in each perspective. However results of the interviews also reveal that most of interviewees fail to identify all seven perspectives. They can however identify about five to six perspectives and the perspectives that are mostly unidentified are image perspective and management perspective. This result suggests that many perspectives in the Balanced Scorecard may lead to confusion and it may

be difficult for staff to remember all perspectives. It will be even more difficult for staff to recognise all objectives and measures in each of these seven perspectives as there are as many as 52 measures.

Comparing to 28 measures in the proposed model and 32 measures in the University of Edinburgh's, the total numbers of measures are almost double in the Chiang Mai University's model. Major differences come from the internal process perspective. In the model of Chiang Mai University, there are as many as 28 measures in this perspective (16 in process perspective and 12 in management perspective). This may be due to the fact that Chiang Mai University is much more interested in the process than in other perspectives or that there are too many measures which are not strategically important in this perspective. With 52 measures in their Balanced Scorecard, it will be difficult for staff to focus on the implementation of strategy.

Also by considering all measures presented in the Balanced Scorecard for Chiang Mai University, it is found that most of measures are outcome measures. Chiang Mai University seems to neglect a major advantage of the Balanced Scorecard, which is the incorporation of performance drivers. This also can explain confusion in the Balanced Scorecard and strategy map.

For linkage between the objectives of these measures, the proposed model and model of the Chiang Mai University illustrate it through the strategy map, but there is no evidence of consideration of linkage in the University of Edinburgh's model.

The University of Edinburgh's model is the only model among the three that has evidence of benchmarking. The model of Chiang Mai University does not provide any information on benchmarking because the model is still in the development phase. For the proposed model of this study, benchmarking is beyond the scope of work. However benchmarking is a good idea because it helps management evaluate the current standings of a university. The benchmarking of the proposed model however can be developed and included in the model without any difficulty.

The models of University of Edinburgh and Chiang Mai University do not have such a measure probably because the model is used internally not externally. Thus the proposed model has more advantage in this aspect as it not only can be used within a particular university, it also can be used as single standard measure for comparison among universities.

By comparing the proposed model to other universities' models, it can be concluded that the model does not ignore the important features associated with the alternatives. However, the proposed model also introduces the use of the AVAR into the Balanced Scorecard. As previously mentioned, AVAR helps a university justify the investment and allocate the funding to improve the selected strategic objectives in the Balanced Scorecard.

The proposed model in this study combines two management tools: adjusted EVA® (AVAR) and the Balanced Scorecard. While the Balanced Scorecard helps management decide which objective should be improved in order to enable a university to achieve its mission, AVAR helps the management not to over or under invest in a particular area. The combination of these two models makes the proposed model distinctive to the others and can be used as a powerful management tool for a university.

In order to assure that the proposed model is suitable for public universities in Thailand, this proposed model should address all current problems of the existing performance measurement framework found in the case study university, which is a typical public university in Thailand. Referring back to the Section II in Chapter Seven, the problems of the existing performance measurement system are again presented as follows.

- There is low awareness of performance measurement system, and measures, among staff and stakeholders.
- Existing measures are not used for management decision making. They are only kept for record.

- Staff and other stakeholders cannot identify linkages between measures and between each measure and objectives of organisation.
- There is more emphasis on output measures than input and process measures, which are important as performance drivers.

The proposed model addresses all of these problems. If the proposed model is in place, the awareness can be increased, as this model is based on a bottom-up approach. It is based on opinions of staff who later become the users of the model. Unlike other metrics, where only few senior management staff are involved in the design stage (top-down approach), the proposed model gathers information from both academic and nonacademic staff with and without management position. As a result, the awareness of the model is increased even when it is still in the design stage.

The proposed model can help management make the better decisions, especially decisions on allocating limited resource to improve the quality of particular objective. The strategy map shows how management can select the area of improvement where quality of objective can be improved and how university's mission can be achieved.

The third problem is also obviously addressed by the strategy map which clearly provides linkages between objectives and between each objective and mission of the university. It also helps promote the importance of each objective as it can be easily seen how one objective affects the others.

Finally it is obvious that the model incorporates both performance drivers and outcomes. It applies the concept of 'balance' and no single area will be overemphasised.

The proposed model therefore addresses all problems associated with the existing performance measurement system within the university. The next topic deals with the implementation strategy of the model.

9.2 Implementation of the new model

The aim of this section is to answer the last research question

‘How is the new model to be successfully implemented in public universities in Thailand?’

Survey is performed as described in Chapter Six. The outcome of this section is the implementation strategies of the new model. These implementation strategies address the following questions.

1. Which approach, the top-down or bottom-up is more appropriate implementation strategy?
2. What are the driving forces of implementing the new model?
3. What are the restraining forces of implementing the new model?
4. What are the critical success factors of implementing the new model?

Since this section uses the results obtained from both interviews and questionnaire distribution in the survey research. The demographic data of interviewees and questionnaire respondents are firstly reported.

9.2.1 The demographic data of interviewees and respondents in the survey research

The demographic data of the interviewees from Thammasat University

Eighteen interviews were conducted; nine with academic staff with management positions, five with academic staff without management positions, three with nonacademic staff with management positions, and one with a member of nonacademic staff without a management position. The demographic data of interviewees is summarised in Table 9.8 as follows.

Highest Education	%	Type of staff	%	Academic position	%
Bachelor	16.7	Academic	77.8	Lecturer	16.7
Master	38.9	Non-academic	22.2	Assistant Professor	16.7
Doctoral	44.4			Associate Professor	38.9
				Professor	5.5
				Non-Academic	22.2
Total	100		100		100

Table 9.8 Demographic data of the interviewees from Thammasat University

By performing cross tabulation, it is found that the largest group of the interviewees in this survey of staff from Thammasat University is the academic staff who obtain the doctoral degree as their highest education and possess the academic position of Associate Professor.

The demographic data of the respondents from Thammasat University

Out of two hundred and fifty questionnaires distributed, ninety-one questionnaires are returned. The response rate is therefore 36.4%. The demographic data of respondents from Thammasat University is summarised in Table 9.9 as follows.

Highest Education	%	Type of staff	%	Academic position	%
Bachelor	14.3	Academic	69.2	Lecturer	25.2
Master	52.7	Non-academic	30.8	Assistant Professor	19.8
Doctoral	25.3			Associate Professor	23.1
Unidentified	7.7			Professor	1.1
				Non-Academic	30.8
Total	100		100		100

Table 9.9 Demographic data of the respondents from Thammasat University

By performing cross tabulation, it is found that the largest group of the respondents in this survey of staff from Thammasat University is the lecturers who obtain the master degree as their highest education.

The demographic data of the respondents from other public universities in Thailand

Out of five hundred and twelve questionnaires distributed, two hundred and nineteen questionnaires are returned. The response rate is therefore 42.8%. The demographic

data of respondents from other public universities in Thailand is summarised in Table 9.10 as follows.

Highest Education	%	Type of staff	%	Academic position	%
Bachelor	4.1	Academic	87.7	Lecturer	14.6
Master	40.6	Non-academic	12.3	Assistant Professor	31.5
Doctoral	52.1			Associate Professor	37.0
Unidentified	3.2			Professor	4.6
				Non-Academic	12.3
Total	100		100		100

Table 9.10 Demographic data of the respondents from other public universities in Thailand

By performing cross tabulation, it is found that the largest group of the respondents in this survey of staff from other public universities in Thailand is the Associate Professors who obtain the doctoral degree as their highest education.

The demographic data of the respondents from staff in the related government agencies in Thailand

Out of forty questionnaires distributed to senior officials at the Commission on Higher Education (CHE) and the Office for National Education Standards and Quality Assessment (ONESQA), fifteen questionnaires are returned. The response rate is therefore 37.5%. The demographic data of respondents from other public universities in Thailand is summarised in Table 9.11 as follows.

Highest Education	%	Organisation	%	Academic position	%
Bachelor	-	CHE	53.3	Lecturer	13.3
Master	20.0	ONESQA	46.7	Assistant Professor	20.0
Doctoral	73.3			Associate Professor	13.3
Unidentified	6.7			Professor	13.3
				Non-Academic	20.0
				Unidentified	20.1
Total	100		100		100

Table 9.11 Demographic data of the respondents from the related government agencies in Thailand

By performing cross tabulation, it is found that the largest group of the respondents in this survey of staff from the related government agencies in Thailand is the

Assistant Professors and other senior officials who do not possess any academic position who obtain the doctoral degree as their highest education.

The demographic data of the respondents from other foreign universities

Out of twenty-nine questionnaires distributed, seventeen questionnaires are returned. The response rate is therefore 58.6%. The demographic data of respondents from other foreign universities that apply the Balanced Scorecard is summarised in Table 9.12 as follows.

Highest Education	%	Type of staff	%	Academic position	%
Bachelor	-	Academic	47.1	Lecturer	5.9
Master	47.1	Non-academic	52.9	Assistant Professor	5.9
Doctoral	41.2			Associate Professor	5.9
Unidentified	11.7			Professor	11.8
				Non-Academic	52.9
				Unidentified	17.6
Total	100		100		100

Table 9.12 Demographic data of the respondents from other foreign universities

By performing cross tabulation, it is found that the largest group of the respondents in this survey of staff from other foreign universities is nonacademic staff who obtain the master degree as their highest education.

9.2.2 Results of the survey

9.2.2.1 The implementation approach

Data analyses from interview

Interviewees prefer the bottom-up approach of the implementation to the top-down approach, but they also state that both approaches should be used if the new system is to be implemented successfully. The key point is that more staff should be involved in both design and implementation of the new system. The performance system certainly has the long term effect on the university. The opinions are split when asking whether the new system should be implemented all at one time (big

bang implementation). Some interviewees indicate that it should be gradually implemented step-by-step, while the other indicates that big bang implementation is a good idea because it leads to less confusion.

Data analyses from questionnaire

Results from the survey reveal that staff from Thai universities and government agencies favour the bottom-up approach of the implementation. These results contradict with the results obtained from perception of staff in the foreign universities that apply the Balanced Scorecard. The difference between Thai and the Western culture can be the explanation of this divergence. Referring back to Chapter Five, Thais possess five prominent Thai values, which include, in Thai words, *Kreng Jai*, *Hai Kiad*, *Nam Jai*, *Hen Jai*, and *Sam Ruam*. All these values by their meanings do not support the top-down approach of implementation. On the other hand, the Balanced Scorecard as proposed by Kaplan and Norton (1992) encourages the top-down approach. Thus it can influence the foreign universities in the western countries that are currently applying the Balanced Scorecard to follow the same approach. The effect of the cultural difference on the implementation of the performance measurement system is the interesting topic that can be further investigated in the future research as recommended in the next chapter.

The other area of disagreement is the way the new system should be implemented: the step-by-step approach or the all-in-one-time (big bang) approach. Staff at Thammasat University and the related government agencies tend to support the big-bang implementation, while staff at other public universities in Thailand and foreign universities tend to oppose to this concept. This depends on how they look at the urgency of the implementation of the new system. Further investigation reveals that staff in foreign universities find it less urgent to implement the new system as they indicate that they are also satisfied with their current system. Thus the big-bang implementation is not needed in their cases. On the other hand, staff in Thammasat University is not satisfied with their current system and state that the new system is urgently required. As a result, the big-bang implementation is preferred.

In conclusion, the implementation approach that is suitable to university, according to opinion from staff in public universities in Thailand, is bottom-up approach. This correlates to what has been found in case study research presented in section 7.2.1, which reports that in Thai university, there is the nature of 'low power distance' based on Hofstede's four main dimensions of the national culture (Hofstede, 1980). As a result, the bottom-up approach is preferable to the top-down approach.

9.2.2.2 The driving forces

Data analyses from interview

Interviewees indicate the main driving forces of the implementation of the new system as follows.

- Newly established quality assurance system of a university
- Increasing competition among universities
- Government's policy of the autonomous university
- Existing performance measurement is not satisfied
- Limited translation of strategy into action
- Low awareness of mission and strategy within a university

The interviewees also indicate that the most important driving force is the newly established quality assurance system for all public universities in Thailand according to the government's policy. This system requires that all public universities need to implement the new performance measurement system urgently otherwise a university may face the difficulty in near future.

Data analyses from questionnaire

The results from the questionnaire show that all of driving forces indicated by interviewees are important according to the opinions from staff in all four groups of organisations: Thammasat University, other public universities in Thailand, the related government agencies in Thailand, and foreign universities. Staff in

Thammasat University, other public universities in Thailand, and the related government agencies indicate that the newly established government's rules and regulations regarding to the performance measurement of a university is the most important driving force. This contradicts with the results obtained from the staff in foreign universities, which indicate that the most important driving force is the limited translation of strategy into action. This divergence of result can be explained that public universities in Thailand are not yet becoming an autonomous university. It is still in the transition period. As a result, there are many new rules and regulations issued by the government in an attempt to help facilitating this transition period.

The new rules and regulations are also in place in order to assure that the quality of education is under control when all public universities become an autonomous university. Thus these rules and regulations are then the main driving force of public universities in Thailand. On the other hand, this is not the case in universities in the western countries. Not surprisingly, the main driving force is different. As the fact that this survey is conducted to foreign universities that are applying the Balanced Scorecard, thus the main driving force is the limited translation of strategy into action, which is in line with the main objective of the Balanced Scorecard.

9.2.2.3 The restraining forces

Data analyses from interview

Results from the interview reveal that the main restraining forces of the implementation of the new system are as follows.

- Data insufficiency
- No senior management support
- Not enough resource to implement the new performance measurement system
- Too tight control – no room for personal judgment
- Increasing workload of staff

The interviewees also indicate that the most important restraining force is the insufficiency of required data. This is the result of the lack of an efficient and effective information technology system. Interviewees also comment that one important aspect that can lead to the success or failure of the new system is the ability to obtain the accurate data within a short period of time so that the data can be used to support the decision in time.

Data analyses from questionnaire

The results from the questionnaire support the results from the interview. Staff from all four groups of organisations: Thammasat University, other public universities in Thailand, the related government agencies in Thailand, and foreign universities indicate that data insufficiency is the most important force restraining the implementation of the new system. The convergence of these results suggests that regardless of the difference in culture, data insufficiency is a major factor that can restrain the implementation of the new performance measurement system into any university.

9.2.2.4 The critical success factor

Data analyses from interview

Results obtain from the interview reveal that the critical success factors of the implementation of the new system include

- Senior management commitment
- Good communication
- Proper design of the new performance measurement system
- Staff participation
- Not treating performance measurement framework as a systems project
- Not too long process of development
- Not introducing the performance measurement framework only for compensation
- Hiring experienced consultants

Interviewees also indicate that senior management commitment and good communication are the most important factors that can lead to the success of the implementation. Without management support, sooner or later the new system will be treated as ‘the project of the month’ and will be finally ignored and failed.

Data analyses from questionnaire

Results are varied among staff in different groups of organisations. For staff in Thammasat University and other public universities in Thailand, the most important factor is the good communication process, i.e. not keeping the performance measurement system at the top. However for staff in the related government agencies and foreign universities, the focus is on the commitment of senior management. However the difference of these two critical success factors between the two groups is not significant and it can be concluded that both communication process and commitment of senior management are the important factors. This also supports the results from the interview.

Table 9.13 presents the results from the questionnaire distribution to staff from all four groups of organisations: Thammasat University, other public universities in Thailand, the related government agencies in Thailand, and foreign universities regarding to the driving forces, restraining forces, and critical success factors of the implementation of the new performance measurement system.

Topics	Thammasat University	Public universities	Government agencies	Foreign universities
Implementation approach				
The new performance measurement system (PMS) should be implemented bottom-up	3.49	3.46	3.50	2.76
Participation of the staff within the university in the design and implementation of the new PMS is a slow and time-consuming process and is not appropriate.	2.48	2.69	2.54	2.53
The new PMS will have a long-term effect on the organisation	3.77	3.66	3.92	4.00
The university should implement the new PMS at one time (big bang)	3.13	2.87	3.38	2.41
Driving forces				
Government's policy of the autonomous university	3.89	4.00	4.31	3.24
Newly established government's rules and regulations regarding to the performance measurement of a university	4.21	4.44	4.54	2.76
Increasing competition among universities	4.20	4.40	4.38	3.71
Low awareness of mission and strategy within a university	3.58	3.35	3.23	2.82
Limited translation of strategy into action	3.80	3.51	3.31	3.94
Existing PMS is not good enough	3.84	3.62	3.42	3.76
Restraining forces				
More workload	3.58	3.42	3.31	3.71
Data insufficiency	4.01	3.89	3.92	4.06
Too tight control – no room for personal judgment	3.52	3.23	3.08	2.69
Existing PMS is good enough	2.49	2.59	2.54	2.82
Not enough resource to implement the new PMS	3.74	3.44	3.54	3.29
No support from senior management	3.75	3.06	3.85	2.53

Table 9.13 The implementation approaches, driving and restraining forces, and critical success factors – results from questionnaire

Note: the highest score of 5 means that the sentence is strongly agree and the minimum score of 1 means that the sentence is strongly disagree.

Topics	Thammasat University	Public universities	Government agencies	Foreign universities
Critical success factors				
Good design of the new PMS	4.21	4.24	4.46	4.31
Senior management commitment	4.34	4.43	4.69	4.81
Involvement of individual	4.42	4.47	4.69	4.06
Not keeping PMS only at the top	4.49	4.48	4.31	4.06
Not too long process of development	4.01	4.13	3.92	3.81
Not treating PMS as a systems project	4.32	4.30	4.23	4.00
Hiring experienced consultants	3.65	3.63	3.31	2.63
Not introducing the PMS only for compensation	3.45	3.28	3.23	3.38

Table 9.13 The implementation approaches, driving and restraining forces, and critical success factors – results from questionnaire (continued)

Note: the highest score of 5 means that the sentence is strongly agree and the minimum score of 1 means that the sentence is strongly disagree.

9.2.3 The implementation strategies

Based on the results obtained from the survey as previously presented, it can be concluded that the bottom-up approach is more appropriate than the top-down approach for the implementation. For the driving and restraining forces, the most important driving forces, if selected by using the threshold of score of 4 (out of 5) according to results presented in Table 9.13, include the government’s policy of the autonomous university, newly established government’s rules and regulations regarding to the performance measurement of a university, and increasing competition among universities. If using the same criteria, the most important restraining force is data insufficiency. From this result, the force field diagram developed by Lewin (1951), as previously described in Chapter Five, can be developed as shown in Figure 9.1. The force field analysis helps management realise the power of driving and restraining forces. The idea is to promote the driving forces to outweigh the restraining forces. In this case, the government policy is the main driving force. This policy is needed to be communicated to all staff in a university to generate the need for change. Equally important, the main restraining force should be minimised. In this case, the only important restraining forces are data insufficiency. This can be overcome by introducing a more effective and efficient information technology system.

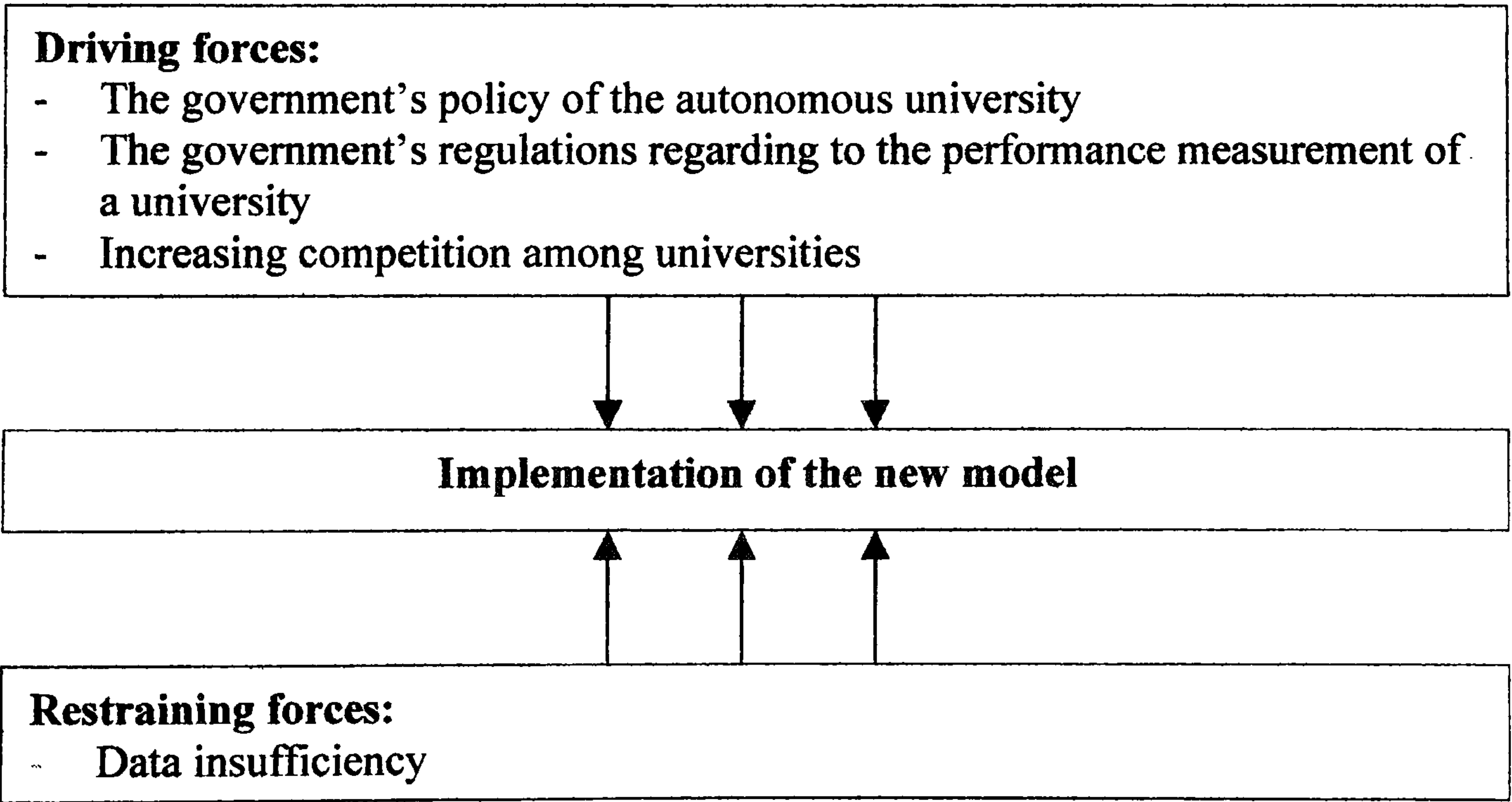


Figure 9.1 The force field diagram of the implementation of the new model

As the results indicate that the bottom-up approach is more appropriate for Thai universities, the organisation development model is then used as a basis to establish the implementation strategies. Nevertheless as described in Chapter Five, there is no route map for organisation development model and changes can be accomplished by using a number of different approaches, the following implementation strategies are therefore based on the general rules of managing a change process, which is adapted from Pugh (1978), as also presented in Chapter Five.

The proposed implementation strategies are as follows.

1. *Establish that there is a need.* In this case the driving forces and restraining forces should be determined before implementing the new model. This is important step because without knowing the driving and restraining forces, the change agencies, who are likely to be management, will not know how to manage the change. The driving forces also have to be made explicit for all staff in order to create the needs for change.
2. *Think it through thoroughly.* The idea is to carefully investigate the reason of why the new model is needed and how it can be used. The benefits of the new system should also be made explicit. The strategy map created in this study shows how management can improve any particular area. It helps management better understand aspects of the model before investing effort and cost after the full implementation
3. *Discuss it informally with those likely to be affected.* In this case, those likely to be affected by the new model are all staff in a university. This process aims to share understanding of the needs for new system and the benefit of the implementation of the new system. It also identifies the possible problems that might occur during the implementation.

4. *Encourage the expression of all objections.* To lead to successful implementation, most of objections, if not all, should be eliminated. However it cannot be dealt with if those objections are not known. This process aims to bring out the frustration of those likely to be affected and try to mitigate or eliminate those frustrations.
5. *Make sure you are willing to undertake change yourself.* It sounds to be simple but it is important. This is in line to what has been found in this study that one of the critical success factors is the senior management commitment. Since management staff are likely a person who can facilitate the change process, they themselves are needed to be convinced that implementation of new system is what a university actually needs.
6. *Monitor the change and reinforce them at all points.* Finally all plans are needed to be properly monitored. During the change process, there are possibilities that new problems can arise or situations are changed. All previous five steps are needed to be revisited and if necessary they must be changed accordingly.

By following this process of implementation, this model can then be implemented into any public universities in Thailand. It is therefore very useful tool for the whole university sector in Thailand or even in other countries. To assure that this model is acceptable, the survey is also conducted to staff in Thammasat University, other public universities in Thailand, the related government agencies, and other foreign universities to investigate the acceptance of the new model.

9.3 Perceptions of staff on the new model

Data analyses from interview of staff in Thammasat University

As previously described in Chapter Six, the demonstration of the model is performed during the interview before asking the interviewee to use the model and comment on it. As shown in Table 9.14 (note that the numbers in the table represent numbers of the interviewee who indicate advantages and disadvantages of the model), the results indicate the wide range of advantages and disadvantages of the model. According to

the results, it implies that the strength of this model is its fairness. This means that there is a little room for biases that might occur. It also covers all objectives of university, which include teaching, research, and academic service to community. The standardisation is another advantage of the model. This model can be used for most units in the university and can be applied into other public universities, which have similar missions. According to the interviewees, who are potential users, the model is also user-friendly. It is not difficult to be used. Finally, transparency is another advantage of the model. This model obviously shows how mission can be achieved and what objectives lead to what results.

According to some interviewees, the disadvantages of the model include the fact that the model is too standardised. Thus it may not be suitable for different units, which might have the different missions. This model also applies excessive control on staff, at least according to the opinion of academic staff without management positions. There is no room for staff judgment. The use of EVA® in the model is also another weakness according to the comment of some interviewees. EVA® is originally designed for a for-profit organisation thus it should not be used in a non-profit organisation like a university. Finally this model is also criticised of being too 'quantitative'. No qualitative explanation is incorporated into the model.

However based on the results from the interviews, 86% of the comments are towards the advantages and only 14% are towards the disadvantages. This indicates that most interviewees are satisfied with the model. However the disadvantages of the model should also be considered. They are the areas that are needed to be aware of.

Topic	Academic staff		Nonacademic staff	
	With management position	Without management position	With management position	Without management position
1. The advantages of the proposed model				
▪ Clearly identified	1	2		
▪ Fair and non-biased	6	4	2	1
▪ Set the priority of objectives		1	1	
▪ Fit to the Thai culture	2	1		
▪ Standardisation	2	1	2	
▪ User-friendly	1	2	2	
▪ Cover all objectives of the University	6	1	1	
▪ Acceptable to staff	3		1	
▪ Incorporate both quantitative and qualitative approach	2			
▪ Transparency	4		1	
▪ Efficiency and effectiveness	1			
▪ Objective	1		1	
▪ Resulted oriented	2			
▪ Support management decision	1			
2. The disadvantages of the proposed model				
▪ Too standardised, not proper for different department, which have totally different missions		3		
▪ Not proper in some units	2			1
▪ Too tight control		1		
▪ EVA® is not proper for not-for-profit organisation		1		
▪ Too quantitative				1

Table 9.14 The use of the model – results from interview

The results from the interview also show that the interviewees are also aware of the existence of the performance measurement system in the university but they are not satisfied with the existing system. That explains why the interviewees believe that the new system is urgently needed and welcome the uses of the proposed model that incorporates both EVA® and the Balanced Scorecard although they prefer the uses of the Balanced Scorecard to EVA®. Finally the interviewees believe that the proposed model can be implemented successfully at Thammasat University.

Data analyses from questionnaire

Results from the questionnaire reveal that the existing performance measurement system of university is widely known. However unlike respondents from the other public universities, the related government agencies, and foreign universities, respondents from Thammasat University are not satisfied with the current system. This explains why Thammasat University needs the implementation of the new system more urgently than the other organisations as the results from the questionnaires also suggest. The results also suggest that the new model can be implemented successfully in their universities. Table 9.15 shows the results from questionnaire from the survey research

The acceptance of the new model	Thammasat University	Other public universities	Related government agencies	Other foreign universities
The existing performance measurement system (PMS) of the university is widely known in the university	3.43	4.01	3.85	3.18
The existing PMS of the university is satisfied	2.64	3.14	3.15	3.12
The new PMS is urgently required for the university	3.78	3.77	3.42	3.29
The university can implement the new PMS successfully	3.33	3.59	3.62	3.59

Table 9.15 Acceptance of the new model – results from questionnaire

Note: the highest score of 5 means that the sentence is strongly agree and the minimum score of 1 means that the sentence is strongly disagree

Perceived value of EVA® and the Balanced Scorecard

Based on the results from the survey using questionnaires, the level of knowledge of the Balanced Scorecard is higher than that of EVA® for every organisation. Staff in foreign universities have the highest level of knowledge of the Balanced Scorecard, while staff in Thammasat University have lowest knowledge of the Balanced Scorecard comparing to the others. Staff in related government agencies have the highest level of knowledge in EVA® and staff in other foreign universities have the lowest level of knowledge of the EVA® comparing to the others.

When asked whether these two tools should be implemented in their universities, results indicate that both the Balanced Scorecard and EVA® are acceptable among staff in Thammasat University, other public universities, and the related government agencies. Staff in other public universities in Thailand tend to accept the Balanced Scorecard more than others, while staff in foreign universities, although know much about the Balanced Scorecard, have the lowest level of acceptance comparing to the others. Staff in related government agencies are likely to accept the concept of the EVA® than others, while staff in foreign universities is unlikely to accept the concept.

It is also noticeable that in case of the Balanced Scorecard, the ones who know most (staff in foreign universities) are the ones who are less likely to accept the concept. However in case of EVA®, the ones who know most (staff in related government agencies) are the ones who are most likely to accept EVA® and the ones who know least (staff in foreign universities) are also the ones who are less likely to accept the concept. These results tend to suggest that knowledge of EVA® has some positive relationship with acceptance of the EVA®. This can be explained that the concept of EVA® is rather new for staff who work in a not-for-profit organisation like a university, thus to accept the concept, staff must have a good knowledge in that concept, otherwise the benefits of EVA® cannot be identified, hence it is difficult for staff to judge whether they will accept this tool.

On the other hand, concept of the Balanced Scorecard is more wide spread, thus the level of knowledge has less effect on the level of acceptance. The ones who know

most in this concept can be the ones who know limitations of the tool thus less likely to accept it.

This evidence is further confirmed by calculation of correlation. Correlation between knowledge of the Balanced Scorecard and its acceptance is found to be 0.469, which is lower than correlation between knowledge of EVA® and its acceptance, which is found to be 0.524.

Table 9.16 shows the perceived value of EVA® and the Balanced Scorecard, Table 9.17 shows the correlation between knowledge of the Balanced Scorecard and its acceptance, and Table 9.18 shows the correlation between knowledge of the EVA® and its acceptance.

Perceived value of EVA® and the Balanced Scorecard	Thammasat University	Other public universities	Related government agencies	Other foreign universities
I know what the Balanced Scorecard (BSC) is	3.16	3.64	4.33	4.41
I know what EVA® is	2.59	3.26	3.83	2.56
The BSC should be implemented within the university	3.53	3.81	3.69	3.41
EVA® should be implemented within the university	3.17	3.42	3.69	2.94

Table 9.16 The perceived value of EVA® and the Balanced Scorecard
Note: the highest score of 5 means that the sentence is strongly agree and the minimum score of 1 means that the sentence is strongly disagree

Correlation		Knowledge of BSC	BSC acceptance
Knowledge of the Balanced Scorecard (BSC)	Pearson Correlation	1	.469
	Sig. (2-tailed)	.	.000**
	Number of Sample	312	304
Acceptance of the Balanced Scorecard (BSC)	Pearson Correlation	.469	1
	Sig. (2-tailed)	.000**	.
	Number of Sample	304	309

**** Correlation is significant at the 0.01 level (2-tailed).**

Table 9.17 The correlation between knowledge of the Balanced Scorecard and its acceptance

Correlation		Knowledge of EVA®	EVA® acceptance
Knowledge of EVA®	Pearson Correlation	1	.524
	Sig. (2-tailed)	.	.000**
	Number of Sample	308	294
EVA® acceptance	Pearson Correlation	.524	1
	Sig. (2-tailed)	.000**	.
	Number of Sample	294	300

**** Correlation is significant at the 0.01 level (2-tailed).**

Table 9.18 The correlation between knowledge of the EVA® and its acceptance

9.4 Quality of the survey research

Similarly to the quality of the case study research, the quality of survey research can be measured in term of reliability and validity. While the meanings of these two criteria are similar in both case study and survey researches, the methods to measure them are different. Both criteria, the reliability and validity, for the survey research are discussed as follows.

9.4.1 Reliability of the survey research

The reliability of the survey research can be measured in different ways. In this survey, the test-retest reliability and alternate-form reliability are addressed.

Test-retest reliability ‘measures the stability of responses over time, typically in the same group of respondents’ (Litwin, 1995:30). It ‘requires administration of survey to a sample at two different and appropriate points in time’ (Litwin, 1995:30). In this study, the measurement of test-retest reliability is performed by asking group of academic staff in other public universities in Thailand to complete the questionnaire before distributing all questionnaires to the samples. After one week of the first completion of the questionnaire, the same group of academic staff is asked again to complete the same questionnaire. The correlation of two sets of response in every item in the questionnaire is then calculated. It is found that all correlations are above 0.70, which are ‘generally accepted as representing good reliability’ (Litwin, 1995:31).

The alternate-form reliability is also tested in this survey. It is 'a method of measuring the correlation between alternative instruments, designed to be as equivalent as possible, administered to the same group of subject' (Zikmund, 2003:301). In this study, the other group of academic staff is asked to complete the first version of the questionnaire. Then the questionnaire is adjusted only by changing the order of the response set. After one week, the same group of academic staff is asked to fill in the second version of the questionnaire. Then the correlation of two sets of response in every item in the questionnaire is calculated. It is again found that all correlations are above 0.70, which represent a good reliability. It therefore can conclude that the reliability of the survey is carefully examined and the potential problems of the reliability are addressed in this study.

9.4.2 Validity of the survey research

In this survey research, two types of validity are examined, the content validity and the construct validity. The content validity is the 'professional agreement that a scale logically appears to accurately measure what it is intended to measure' (Zikmund, 2003:302). It is 'usually assessed by individuals with expertise in some aspect of the subject under study' (Litwin, 1995:45). In this study, questions in the interview and questionnaire are reviewed by the academic supervisor and academic staff who possess the knowledge of research method, i.e. they obtain academic position of at least the Assistant Professor, obtain the doctoral degree, and teach research method class at the postgraduate level. The comments obtained from those experts are then used to adjust the content in the questionnaire and questions for the interview before distributing all questionnaires and conducting the interviews.

The other type of validity that is examined in this survey is the construct validity. The construct validity is 'the ability of a measure to confirm a network or related hypotheses generated from a theory based on the concepts' (Zikmund, 2003:303). It is the 'theoretical measure of how meaningful a survey instrument is' (Litwin, 1995:45). In this survey research, data triangulation, which uses both the interview and questionnaire distribution to collect data, is used in an attempt to develop the convergence of results. With the data triangulation, the problems of the construct validity are addressed because it confirms that differences generated by a measure,

which is consistent with the theoretical logic, reflect that of the trait and not that of the method. Thus it can finally conclude that the validity of the survey is also carefully examined and the potential problems of the validity are also addressed in this study.

The conclusion of the study and the future research are presented in the final chapter, Chapter Ten.

CHAPTER TEN: CONCLUSIONS AND FUTURE DEVELOPMENT

This chapter presents the conclusions of the thesis. In this chapter, the background of the problems, the gaps of the literatures, and the objectives of study and the research questions are again described. The chapter also summarises the research methodology used in this thesis to answer the research questions and also the results of the study. The concept of originality and the contribution to knowledge are also discussed. This chapter describes how the results can be generalised and also proposes the future development in this area. The limitations of the study are also addressed. Finally the chapter concludes the contribution of the thesis to the higher education sector in Thailand.

The topics covered in this chapter therefore include

1. *Statement of the problems.* This section discusses the reasons why the subject of the thesis is important. The gaps of literatures are also described to show that the problems are not sufficiently addressed, which also support the importance of the thesis. The statement of the problems then leads to the objectives of study and the research questions of this study.
2. *Summary of results.* In this section, the methodology and the theory used in the thesis to answer the research questions are summarised. Results of the study are also described in the relation to all research questions of the study.
3. *The original contribution to knowledge.* This section aims to discuss the originality of the work in different ways. The statement of contribution to knowledge is also presented in this section.
4. *Generalisation of the results.* The aim of this section is to critically discuss how the results found in this study can be generalised. It also addresses how knowledge generated in this study can be transferred.
5. *Limitations of the study.* This section presents the limitations of the thesis, which include the limitations of the methods used in the study.

6. *Future development.* In this section the possible development in this area is recommended. The section focuses on the problems that remain unsolved and future research that can address those problems.
7. *Impact of the study on the development of performance measurement of the public university in Thailand.* The final section presents the contribution of the thesis to the higher education sector in Thailand. This section presents the current development of the performance measurement system in public universities in Thailand and describes how the model created in this thesis can be used.

10.1 Statement of problems

The Thai government has established a policy that every public university should leave the central government control system. Every public university in Thailand is now moving towards what is called the 'autonomous university'. Under the new system, every public university in Thailand receives a limited amount of funding from the government. This funding is substantially lower than received under the previous system. This drives the need for change in the performance measurement system in every public university in Thailand.

At the present, public universities in Thailand still do not have the well-established performance measurement systems. Systems currently in place are purely concerned with budgeting, where the university asks for funding to support its activities. However as de-bureaucratisation progresses it is inevitable that every public university in Thailand will establish a performance measurement framework, not only to be able to operate under the new system where the government funding is substantially reduced, but also to be able to compete with other local and international universities. Without such a performance measurement system, the university cannot survive in the increasing competition in the higher education sector.

By reviewing the literature on performance measurement systems currently used in higher education sector in Thailand, it has been found that the only performance

measurement framework developed to prepare a public university to operate after the de-bureaucratisation is that of the Office for National Education Standards and Quality Assessment (ONESQA). However this system is only established to control the quality of education after liberisation. It is not a model to guide how a university can achieve its mission or to help a university to manage its limited amount of resource efficiently. It then becomes obvious that a public university needs the new performance measurement system that is appropriate for the new environment, where the competition among universities is the main threat that never happens before and the university itself needs to generate its own income in order to survive.

Such a system for public universities is not yet developed in Thailand. Further literature reviewed suggests that the Balanced Scorecard and EVA® performance measurement systems are widely accepted in many business corporations. They are, however, less developed in the area of higher education, especially the concept of EVA®. In fact the literature shows no evidence of its use in universities at all. Research also suggests that the two methods have both advantages and limitations. However if applied to the context of the public university in Thailand, the strength of one method can complement the limitation of the other. Consequently, it is worth investigating if the two can be integrated for use in public universities in Thailand.

The main objective of this study is to construct a model that integrates these two management tools to be used as the performance measurement framework for public universities in Thailand. To accomplish this main objective, the variables that affect the design of the model are investigated in the study. Those variables include the university's structure and culture and the perception of the university's stakeholders on the problems of the existing system and the acceptance of two new tools. The results from the investigation of these variables are then used to design the new model. Finally the implementation strategies of new model are also proposed based on the perception of staff in public universities so that the public universities in Thailand can implement the model successfully. In conclusion, the research questions in this study are established in relation to the objectives, which cover the following topics.

1. The investigation of the university's organisation structure and culture

2. The investigation of the perception of the university's stakeholder on the problems of the existing performance measurement system that is currently applied within the university
3. The investigation of the perception of the university's stakeholders on the use of EVA® as the performance measurement model
4. The investigation of the perception of the university's stakeholders on the use of the Balanced Scorecard as the performance measurement model
5. The design of new model that combines EVA® and the Balanced Scorecard as being the performance measurement model for public universities in Thailand.
6. The investigation of the implementation strategies of the new model.

All of the objectives and research questions are addressed in this study. The results are summarised in the next section.

10.2 Summary of results

The research methods used in this study are the case study research and the survey research. Those methods are chosen because they are appropriate to the research questions. The case study research is appropriate to the 'how' and 'why' research question, while the survey research is appropriate to the 'what' research question. Those two methods are appropriate when the interested event is contemporary and the control behaviour is not possible. Both are the cases in this thesis.

In the case study research, Thammasat University is chosen as the case study. It is chosen because it can represent a typical public university in Thailand. Therefore the model designed based on the results from the case study research can also be used in other public universities in Thailand.

The main methods used to collect data in both the case study research and the survey research are interview and questionnaire. Documentation and observation are also used whenever is possible. Data triangulation is used in this thesis because it helps increase the validity of the study. The theory that is used as a basis of this study is the contingency theory, which states that there is no one best management technique. It all depends on the set of variables under a particular situation. The theory then supports the integration of two management tools: EVA® and the Balanced Scorecard because neither of these two techniques alone is the most appropriate for a university. Integrating EVA® and the Balanced Scorecard is found to be more effective for a university than applying either EVA® or the Balanced Scorecard.

The contingency theory is also used as a basis to design the new model that incorporates these two techniques. In this thesis, the model is built according to contingent variables: the university's structure and culture, perception of the university's stakeholder on the problems of the existing system, and acceptance of EVA® and the Balanced Scorecard. Thus the model built from this study can be argued to be the most appropriate performance measurement model for public universities in Thailand.

The data collected from the methods used in this study is then analysed. Results from the case study research reports the current structure and culture of the case study university. The results also suggest that currently there is low awareness of performance measurement system among staff in the case study university. The existing measures are also not used for internal management. They are only kept for record. Most of staff cannot identify the linkage between objectives and mission of the university. Finally there is more emphasis on output measures than input and process measures, which are the important performance drivers. According to the findings, interviewees and questionnaire respondents welcome the uses of the two management tools: EVA® and the Balanced Scorecard. The new model is then built qualitatively based on the results from the case study.

After the new model is built, the new model is also compared to the other models currently applied in the other universities both in Thailand and in foreign country. The survey is also conducted to staff in Thammasat University, other public

universities in Thailand, the related government agencies in Thailand, and foreign universities regarding to the implementation strategies and the acceptance of the new model. Results suggest that the bottom-up approach is more preferable to the top-down approach for the model implementation. The model is generally accepted and can be implemented into Thai public universities successfully.

10.3 The original contribution to knowledge

The model created based on the results and findings in this thesis is original in many ways. It is original in its design and its application. It also enhances the application of existing theory.

Firstly, it is the first performance management model to be used in a university that incorporates the uses of two management tools, the Balanced Scorecard and EVA®. Although both of the Balanced Scorecard and EVA® have been widely used in many organisations, each of them is infrequently used for a not-for-profit organisation such as a university. According to results presented in Chapter Nine, it is rare that the Balanced Scorecard is used for the whole university, and there is no evidence of the use of EVA® in a university at all. Therefore this thesis enhances the existing knowledge of the Balanced Scorecard and EVA® by combining the two concepts and applying to the organisation that have never been implemented before.

Secondly, the model created in this thesis is also the first performance measurement model created for the public universities in Thailand under the new environment after the university becomes the autonomous university. It is unique in the way that this model is originally created to fit Thai culture in the university context.

Thirdly, in this study, the model is created based on input from stakeholders, a practice rarely reported in the literature. It is derived directly from stakeholders' opinion, so implementation is likely to be successful as the stakeholders are involved from early design stages. Although Kaplan and Norton, the inventors of the Balanced Scorecard, propose that building the Balanced Scorecard should be a top-down process (Kaplan and Norton, 2001), this study also argues that a bottom-up approach is also possible. It is also acceptable among staff in other public universities. The

model based on the perception of stakeholders also provides useful information to top management when building a new strategy, or when revising an existing strategy.

Finally, this thesis uses contingency theory in a new way. It is found in the literatures that the contingency theory has been applied for organisational structure, managerial processes, and organisational conflict and change. Nevertheless the application of the contingency theory for the design of the performance measurement system, especially for a university, is rarely reported. This study is among the first to use the contingency theory to design a performance measurement model for a university.

10.4 Generalisation of the results

The results from this thesis can be generalised and applied in other public universities in Thailand. This is possible because the results from the case study research are obtained from one case study university, Thammasat University, which represents a typical public university in Thailand. Thus all contingent variables that affect the design of the model are very similar to those of the other public universities in Thailand.

Furthermore the opinions of management staff, who are the potential users of the model, in other public universities in Thailand are also collected in the survey research. Those samples are statistically large enough to make the statistical generalisation to the population of all management staff in other public universities. The results also suggest that management staff in other public universities in Thailand welcome the use of the new model and are confident that the new model can be implemented in their universities successfully.

The results found in this study can also be generalised analytically. In the analytical generalisation, the results are generalised to some boarder theory (Yin, 2003:37). In this thesis, the method of the design of the performance measurement model for public universities in Thailand can be generalised to the other universities in Thailand and even in other countries. The method of design remains unchanged although the contingent variables that affect the design of the model may need to be reviewed and adjusted if necessary for other type of university or for universities in

other countries. The uses of the Balanced Scorecard and EVA® for a university can be analytically generalised to the other types of not-for-profit organisation that have similar context to the public university as well.

10.5 Limitations of the study

Since this thesis uses both the case study and survey research, the limitations of the study are therefore related to the limitations of these methods. In the case study research, only one university is chosen as the case study. Although the case study university can represent a typical public university in Thailand and what have been found can also be generalised to other public universities, the replication logic is still not made. This means that the results obtained from the case study in this thesis are still not tested by replicating the findings in other case studies. Thus the theory is still not strongly supported. For the survey research, as most of samples are management staff, the generalisability of findings is then limited to management staff in public universities in Thailand and cannot be made to other university's stakeholders or staff in other type of university in Thailand or in other foreign countries.

10.6 Future development

As the outcomes of this study are based on a single case study, the Thammasat University, replication is recommended. The same case study can be replicated for other universities, both in Thailand and abroad. However it is important to note that the logic of replication is not similar to the logic of sampling. Additional case is selected so that 'it either (a) predicts similar results (a literal replication) or (b) predicts contrasting results but for predictable reasons (a theoretical replication)' (Yin, 2003:47). Cases however are not chosen because they represent the population of all universities.

Another area for possible future research is the implementation of model proposed in this thesis. The model proposed in this study can be implemented either at the Thammasat University or other public universities. The implementation of the model can confirm its value and can reveal limitations of the model. The model can then be

further improved. The cause and effect relationships in the model can also be tested statistically for a university where historical data is available. It will either confirm the relationships or reveal that they might not be as expected. In the latter case, more investigations of the cause and effect relationships can be performed to understand the relationship better by adding or replacing some elements in the model.

Benchmarking is also another area that can be studied further. In the model, the measures in each perspective can be benchmarked against the industry average, or against leading universities in the world. This will also improve the model in that it helps set the target of each measure, so that a university is able to know its status, and can find a way to reach the target in each perspective.

Finally, a comparison between the model proposed in this thesis and other models in other universities in different countries can be studied. The factors that cause differences can also be further investigated. The effect of the cultural difference on the implementation of the model is another interesting issue, as it will enhance the use of the model beyond its use in public universities in Thailand.

10.7 Impact of the study on the development of performance measurement of the public university in Thailand

The model developed as a result of this doctoral research, from a direct sponsor/user perspective, is primarily of interest to the Faculty of Commerce and Accountancy and to Thammasat University. The Faculty was fully aware of the research and is very interested in developing the performance measurement system further. In February 2006, the model was implemented by the Faculty under the guidance of quality assurance committee, consisting of the Dean, all Associate and Assistant Deans, and the researcher as Director of Quality Management and Assurance.

At the beginning of models implementation, the change strategy adopted is one of organisation development, which is driven by engagement rather than interventionist philosophies.

The process of implementation includes the establishment that there is a need for change. In this case, the main driving forces, which are the government's policy of the autonomous university, the government's regulations regarding to the performance measurement of a university, and increasing competition among universities, results obtained from research and presented in Chapter Nine, are made explicit for all staff in order to create the needs for change.

Then the reason for the new model, and how it can be used is also made explicit. The strategy map created in this study demonstrated to staff how management can better understand university performance by using the model. A further informal discussion with staff who are likely to be affected by model was conducted. Most of the staff generally accept the model. A few staff disliked the data collection process because it affects their working time. Here the reason for data collection and the needs for new system was explained, creating understanding of the benefits of the new system.

To ensure that everybody understands and accepts the model, the Faculty management encouraged every staff member to express their opinions, especially negative opinions. In order to lead to successful implementation, most of objections and frustrations should be mitigated or eliminated prior to implementation.

Based on the results from the research presented in Chapter Nine, two critical success factors, management commitment and communication process were taken seriously. Management staff made every effort to ensure that the model is well implemented. Any required resource for model implementation was provided. The implementation of model was also communicated to all Faculty staff through Faculty and departmental meetings.

Finally to make sure that the implementation is sustainable, management staff gave the full responsibility to the researcher, as the director of quality management and assurance, to monitor the progress of the model implementation and report to the Faculty, when problems arise.

At the moment, the proposed model is still not fully implemented. At the beginning, the only Balanced Scorecard model is implemented. Data has been collected and

analysed based on the proposed strategy map. For AVAR, the process of establishing the new accounting system and asset allocation is underway. Asset allocation is important, as it will affect the calculation of capital charge. It is expected that at the end of the year 2006, these activities will be completed and the calculation of AVAR will become possible.

At this early stage of implementation, it has been found that staff in the Faculty generally accept the model. Management have used the model as a basis for discussion in Faculty board meetings. The measures have become more relevant since the cause and effect relationship is now obvious. Discussion about each measure is compares what has happened in the past to the present situation. These measures are now discussed once a month, compared to once a year. The format of board meeting has also changed. The researcher, as Director of Quality Management and Assurance, is invited to the meeting once a month to present Faculty performance results. The meeting usually starts with general administration issues and then moves on to discussion of results in the strategy map. The cause and effect relationship is also used for analysis. The meeting normally lasts about 2-3 hours. This is quite different from the format of the meeting in the past when most issues discussed in the board meeting are related to general administration rather than discussion of strategies.

At the moment, results based on the interviews of key management staff indicate that the short-term value of the proposed model is encouraged by the Faculty to set reasonable expectations for the university's objectives for the time period being measured. The measures are identified so as to ensure short-term fulfilment of the university's strategic goals and mission. In the short term, the Faculty still focuses on the perspectives that can be easily built on. For example, management staff try to reduce administrative cost by using resources in a more cost-effective way, raise funds, encourage academic staff to focus on both teaching and research, train and test the staff, adjust course programs, etc. All are fully aware that all goals cannot be achieved within short period of time. However, at least, most staff know what they should do to enhance and sustain the Faculty's reputation.

In the longer term, although management staff still do not see the uses of the proposed model in the university's context in terms of the means to profit generation, they expect that the proposed model would do more than that. In the long run, they believe that the proposed model would create the culture of working and managing things in a "balanced" manner. For example, rather than focusing on the teaching alone, the staff must also be a part of the university to respond to the needs of all stakeholders, i.e., students, employers, staff, alumni, parents, community, etc.

The most difficult obstacle that is foreseeable in the implementation of the model based on opinion of key management staff is bureaucratic system in the public university. Public universities receive support from the government and it has been like this for a very long time. To encourage staff to adopt the proposed model is not easy because they still believe that this is for private companies. Universities do not focus on profit. The model itself is good but to make people believe in the model is another thing. Therefore, the university must inform staff and let them know that even the public universities must improve in order to stay in that elite position.

Since the model has been in place for only six month, the full effect of the model on staff's behaviour still cannot be fully observed at the moment as it takes time for the model to change staff's behaviour. As suggested in future development of research, this topic can be further explored when the model has been implemented for approximately about a year to see how it affects staff's thinking and behaviour.

This model is not only aimed Faculty level, at a higher level Thammasat University is also interested in the model. The senior management of the University including the Rector, Associate Rector, and Deans of every Faculty in the University invited the researcher to present the model in May 2004. Thammasat University is also trying to develop its own performance measurement system, and this model can be used as a guideline for the development.

The impact of this study is not limited to the uses within the Faculty and Thammasat University. At the time of study, the Commission on Higher Education under the Ministry of Education is going to develop a performance measurement system to be

used for all public universities in Thailand. The Researcher has also been invited to be part of the development team as the model in this study is also of interest of the Ministry.

Initial pilot testing suggests that the model can answer the problems that occur in the current performance measurement systems, as stated in Chapter Two. The model integrates all fragmented measures in a cause and effect manner and also proposes a single measure, AVAR, to be used as benchmarking tool to help a university see how it perform in general. The model also takes into the account of the efficient use of resources within a university.

Thus it is expected that the model created in this thesis can be used as a tool for all universities in Thailand and can help any university diagnose its performance and better manage its organisation, finally leading to the achievement of its mission.

APPENDIX 1: THE EXAMPLE OF QUESTIONS USED IN THE INTERVIEW OF STAKEHOLDERS OF THAMMASAT UNIVERSITY IN THE CASE STUDY RESEARCH

Section 1: General information

1. What is your highest education?
2. What is your position in the university?
3. What is your academic position?
4. Which faculty and department are you working for?

Section 2: The organisation structure and culture

1. Does your university have mission? If yes, what is it?
2. Does your department/faculty have mission? If yes, what is it?
3. How many levels of authorisation are in university, faculty, and department (administrative authorisation)?
4. Where are you in the hierarchy of the organisation?
5. What is the value you will be allowed to commit without going to above authorisation? Please also describe the process of budget approval.
6. What best describes the usual communication process in university/faculty/department, top-down, bottom-up, or flows freely in all direction at all level?
7. How do you communicate policies to the employees?
8. In what ways can they give the feedback?
9. What do you think are the weaknesses of the communication process in your organisation?
10. How is the control system in the university/faculty/department? Do you have unwritten rules, written rules, or very specific rules for everything?
11. Who drives the changes of academic course? Who is needed to be consulted? Who will authorise the change?
12. Who drives the changes related to consultancy project? Who is needed to be consulted? Who will authorise the change?
13. Who drives the changes of administration within the organisation? Who is needed to be consulted? Who will authorise the change?
14. Any other comments related to your organisation structure and culture?

Section 3: The existing performance measurement

- 1. Does your organisation measure the quality of graduates? If yes, what do you measure?
- 2. Does your organisation measure the quality of learning? If yes, what do you measure?
- 3. Does your organisation measure the quality of learning support? If yes, what do you measure?
- 4. Does your organisation measure the quality of research? If yes, what do you measure?
- 5. Does your organisation measure the quality of academic service to the community? If yes, what do you measure?
- 6. Does your organisation measure the quality of preservation of art and culture? If yes, what do you measure?
- 7. Does your organisation measure the quality of administration and management? If yes, what do you measure?
- 8. Does your organisation measure the quality of quality assurance system and mechanism? If yes, what do you measure?
- 9. What else do you measure?
- 10. Why do you measure the indicators above? Is it the requirement or for internal management or for both reasons?
- 11. Who do you benchmark against for each of these indicators?
- 12. How do you rate relationship between measures in each category and objectives of the organisation? Please fill in the form.

Performance measures	Least	Less	Average	Much	Very Much
Quality of graduates					
Quality of learning					
Quality of learning support					
Quality of research					
Quality of academic service to the community					
Quality of preservation of art and culture					
Quality of administration and management					
Quality of quality assurance system and mechanism					

13. Please rank the importance of measures in each category

Section 4: The uses of the Economic Value Added

1. What are your current financial measures in your organisation?
2. Why do you measure?
3. Are you satisfied with the current financial measures in your organisation?
Please provide the reason
4. What are the problems with the current financial performance measures?
5. Have you previously heard the term 'Economic Value Added (EVA®)'? If yes
what is EVA®?
6. Do you think that EVA® should be implemented within the University? If yes, in
which level?

Section 5: The uses of the Balanced Scorecard

1. Have you previously heard the term 'Balanced Scorecard'? If yes, what is the
Balanced Scorecard?
2. Do you think that The Balanced Scorecard should be implemented within the
University? If yes, in which level?
3. Which perspective should be included into the Balanced Scorecard?
4. Which measures should be included into each perspective in the Balanced
Scorecard?

Section 6: Conclusion

1. Do you have any other comments regarding to the performance measurement in
the university?

APPENDIX 2: THE QUESTIONNAIRE USED IN THE CASE STUDY RESEARCH

SECTION 1: THE ORGANISATION STRUCTURE AND CULTURE

1. Does your University have mission?

- ☐ 1. Yes ☐ 2. No ☐ 3. Do not know

2. If yes, how can you describe it?

- ☐ 1. Very well ☐ 2. Partly ☐ 3. Cannot

3. Does your Faculty have mission?

- ☐ 1. Yes ☐ 2. No ☐ 3. Do not know

4. If yes, how can you describe it?

- ☐ 1. Very well ☐ 2. Partly ☐ 3. Cannot

5. How can you describe the authorisation level in the Faculty?

- ☐ 1. Very well ☐ 2. Partly ☐ 3. Cannot

6. How can you describe the budgeting approval process in the Faculty?

- ☐ 1. Very well ☐ 2. Partly ☐ 3. Cannot

7. What best describes the usual communication process in Faculty?

- ☐ 1. Top-down ☐ 2. Bottom-up ☐ 3. Both ways ☐ 4. Do not know

8. How do you communicate policies to the employees?

Top-down communication channels	Frequency of Use				
	Very rare	Rare	Average	Often	Very often
Memo/Circulated Letter					
Meeting					
Personal appointment					
Email					
Informal conversation					
Announcement on board					

9. In what ways can they give the feedback?

Bottom-up communication channels	Frequency of Use				
	Very rare	Rare	Average	Often	Very often
Memo/Circulated Letter					
Meeting					
Personal appointment					
Email					
Informal conversation					
Announcement on board					

10. What do you think are the weaknesses of the communication process in your organisation?

Communication weaknesses	Seriousness of the problem				
	Not serious at all	Less serious	Average	Serious	Very serious
Too many channels					
Too few channels					
No follow-up process					
Non-continuity of management					
Slowness of the process					
Unclear message					
Communication to wrong person					
No cooperation between units					

11. How is the control system in the Faculty?

☐ 1. Written rule ☐ 2. Unwritten rule ☐ 3. Both formats ☐ 4. Do not know

12. Who drives the changes of academic course?

.....

13. Who is needed to be consulted?

.....

14. Who will authorise the change?

.....

15. Who drives the changes related to consultancy project?

.....

16. Who is needed to be consulted?

.....

17. Who will authorise the change?

.....

18. Who drives the changes of administration within the organisation?

.....

19. Who is needed to be consulted?

.....

20. Who will authorise the change?

.....

SECTION 2: THE EXISTING PERFORMANCE MEASUREMENT

21. (1) Does your organisation measure the quality of graduates?

☐ 1. Yes ☐ 2. No ☐ 3. Do not know

(2) If yes, what do you measure?

	% Employment within 1 year
	% Further studying within 1 year
	Employer satisfaction
	Number of publications from master theses per total number of master theses
	Number of publications from doctoral theses per total number of doctoral theses
	Other.....

22. (1) Does your organisation measure the quality of learning?

☐ 1. Yes ☐ 2. No ☐ 3. Do not know

(2) If yes, what do you measure?

	Number of credits or hours in practical learning course
	Number of hours in field study
	Number of elective courses
	Number of multi-disciplinary curriculum
	Number of course delivered via Internet
	Number of Internet connection points
	Number of hours for library and computer service
	Student's opinion on lecturer's teaching efficiency
	Number of student activities/projects per total number of students
	Number of research related to learning process
	Other.....

23. (1) Does your organisation measure the quality of learning support?

☐ 1. Yes ☐ 2. No ☐ 3. Do not know

(2) If yes, what do you measure?

	Staff-student ratio
	Operating budget per total full time equivalent student
	Percentage of lecturers who obtain doctoral degree
	Number of computer per total full time equivalent student
	Total library and IT expenses per total full time equivalent student
	Other.....

24. (1) Does your organisation measure the quality of research?

☐ 1. Yes ☐ 2. No ☐ 3. Do not know

(2) If yes, what do you measure?

	Number of publications per full time lecturer
	Number of research that can be used for other researches or in teaching per full time lecturer
	External research funding per full time lecturer
	Internal research funding per full time lecturer
	Other.....

25. (1) Does your organisation measure the quality of academic service to the community?

☐ 1. Yes ☐ 2. No ☐ 3. Do not know

(2) If yes, what do you measure?

	Number of academic service activities or projects
	Number of full time lecturers who are committee in professional bodies
	Other.....

26. (1) Does your organisation measure the quality of preservation of art and culture?

☐ 1. Yes ☐ 2. No ☐ 3. Do not know

(2) If yes, what do you measure?

	Number of activities that are related to preservation of art and culture
	Number of activities that develop and establish the standard of art and culture
	Other.....

27. (1) Does your organisation measure the quality of administration and management?

☐ 1. Yes ☐ 2. No ☐ 3. Do not know

(2) If yes, what do you measure?

	Percentage of staff salary per total operating expenses
	Percentage of administrative staff per operating expenses
	Number of non-academic staff per number of full time equivalent student
	Percentage of central administrative expense per total operating expenses
	Depreciation expenses per number of full time equivalent student
	Percentage of net profit per operating expenses
	Other.....

28. (1) Does your organisation measure the quality of quality assurance system and mechanism?

☐ 1. Yes ☐ 2. No ☐ 3. Do not know

(2) If yes, what do you measure?

	Process and activities that are related to internal quality assurance
	Internal quality assurance budget
	Number of units that implement internal quality assurance
	Other.....

29. Why do you measure the indicators above?

Performance measures	Requirement	For internal management	Both objectives	Do not know
Quality of graduates				
Quality of learning				
Quality of learning support				
Quality of research				
Quality of academic service to the community				
Quality of preservation of art and culture				
Quality of administration and management				
Quality of quality assurance system and mechanism				

30. Who do you benchmark against for each of these indicators?

<u>Performance indicators</u>	<u>Do you benchmark?</u> <u>(Yes/No/Do not know)</u>	<u>If yes, who do you benchmark against?</u>
1. Quality of graduates		
2. Quality of learning		
3. Quality of learning support		
4. Quality of research		
5. Quality of academic service to the community		
6. Quality of preservation of art and culture		
7. Quality of administration and management		
8. Quality of quality assurance system and mechanism		

31. How do you rate relationship between measures in each category and objectives of the organisation?

Performance measures	Least	Less	Average	Much	Very Much
Quality of graduates					
Quality of learning					
Quality of learning support					
Quality of research					
Quality of academic service to the community					
Quality of preservation of art and culture					
Quality of administration and management					
Quality of quality assurance system and mechanism					

32. Please rank the importance of measures in each category (1 = the most important, 8 = the least important)

Performance measures	Ranking
Quality of graduates	
Quality of learning	
Quality of learning support	
Quality of research	
Quality of academic service to the community	
Quality of preservation of art and culture	
Quality of administration and management	
Quality of quality assurance system and mechanism	

SECTION 3: THE STUDY OF EVA®

33. (1) Do you know what existing financial measures in your organisation are?

☐ 1. Yes ☐ 2. No ☐ 3. Not sure

(2) Why does your organisation measure those financial measures?

☐ 1. Requirement ☐ 2. For internal management
☐ 3. Both objectives ☐ 4. Do not know

34. Are you satisfied with the existing financial measures in your organisation?

Please provide the reason

☐ 1. Extremely satisfied ☐ 2. Satisfied ☐ 3. Neutral
☐ 4. Dissatisfied ☐ 5. Extremely dissatisfied

35. What are the problems with the current financial performance measures?

	Do not relate to the University or Faculty’s objectives
	Obsolete financial data
	Obsolete accounting system
	Slowness of the financial report
	Not useful financial data
	Do not know
	Other.....

36. (1) Have you previously heard the term “Economic Value Added (EVA®)”?

☐ 1. Yes ☐ 2. No

(2) If yes, do you know what EVA® is?

☐ 1. Know very well ☐ 2. Partly know ☐ 3. Do not know

If you do not know what EVA® is, please read the following definition of EVA® and answer the following questions.

WHAT IS THE ECONOMIC VALUE ADDED (EVA®)¹?

The Economic Value Added (EVA®) is a measure of surplus value created on an investment. It is defined as the net operating profit after taxes subtracted with the cost of capital tied in operation. Put most simply, “EVA® is an estimate of true economic profit, or the amount by which earnings exceed or fall short of the required minimum rate of return, investors could get by investing in other securities of comparable risk”².

There are two key components in EVA®: the net operating profit after tax (NOPAT) and the capital charge. NOPAT is the profits from operations after taxes, but before financing costs e.g. interest expenses. It is the total profits available to those who invest capital to the organisation. The capital charge is the amount of invested capital times the cost of capital. It is the cash flow required compensating investors for the riskiness of the business given the amount of capital invested.

The cost of capital is the minimum rate of return on capital required to compensate debt and equity investors for bearing risk and the invested capital is the amount of cash invested in the business, net of depreciation.

In formula form,

$$\text{EVA} = \text{Operating Profit} - \text{A Capital Charge}$$

$$\text{EVA} = \text{NOPAT} - (\text{Cost of Capital} \times \text{Invested Capital})$$

In reality, there are adjustments to both NOPAT and the invested capital to reduce non-economic accounting and financing conventions on the income statement and balance sheet.

¹ Economic Value Added (EVA®) is a registered trademark of Stern Stewart & CO

According to the Stern Stewart & CO, who introduced the concept of EVA®, the advantage of EVA® is that it is conceptually simple and easy to explain to non-financial managers. It starts with familiar operating profits and simply deducts a charge for the capital invested in the organisation. By assessing a charge for using capital, EVA® makes managers and staff care about managing assets as well as income, and helps them properly assess the tradeoffs between the two. This broader, more complete view of the economics of a business can make dramatic differences.

37. Do you think that EVA® should be implemented within the University?

- ☐ 1. Yes ☐ 2. No ☐ 3. Do not know

38. If yes, to which level should EVA® be implemented?

<input type="checkbox"/>	University level
<input type="checkbox"/>	Faculty level
<input type="checkbox"/>	Department level
<input type="checkbox"/>	Project level
<input type="checkbox"/>	Other level

SECTION 4: THE STUDY OF THE BALANCED SCORECARD

39. (1) Have you previously heard the term “Balanced Scorecard”?

- ☐ 1. Yes ☐ 2. No

(2) If yes, do you know what the Balanced Scorecard is?

- ☐ 1. Know very well ☐ 2. Partly know ☐ 3. Do not know

If you do not know what the Balanced Scorecard is, please read the following definition of the Balanced Scorecard and answer the following questions.

² From Stern & Stewart WWW page: www.eva.com

WHAT IS THE BALANCED SCORECARD?

The Balanced Scorecard is a management tool that translates an organisation's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system. Developed by Professor Dr. Robert Kaplan and Dr. David Norton in 1992³, the Balanced Scorecard methodology is a comprehensive approach that analyses an organisation's overall performance in four perspectives, which are

1. Financial perspective - How should we appear to our shareholder
2. Customer perspective - How do we look to our customers?
3. Internal business process perspective - What processes must we excel at?
4. Learning and growth perspective - How will we sustain our ability to change?

The concept of the Balanced Scorecard is based on the idea that assessing performance through financial returns only provides information about how well the organisation did prior to the assessment and it will be quickly becoming obsolete. Therefore the Balanced Scorecard is designed so that organisation can track financial results while simultaneously monitoring progress in building the capabilities and acquiring the intangible assets they need for future growth.

As a structure, the Balanced Scorecard breaks organisation's mission and strategies to objectives, measures, targets and initiatives in each perspective. The links between each perspective in the Balanced Scorecard are established to represent causal relationship. Improvement in learning and growth may lead to better internal business process resulting in customer satisfaction, which in turn, leads to good financial performance. Therefore the Balanced Scorecard will provide managers and staff in the organisation with the tool they need to navigate to future competitive success.

³ Kaplan, R. S., Norton D. P. (1992), The Balanced Scorecard - Measures that Drive Performance. *Harvard Business Review* (Jan - Feb, 1992)

40. Do you think that The Balanced Scorecard should be implemented within the University?

- ☐ 1. Yes ☐ 2. No ☐ 3. Do not know

41. If yes, to which level should the Balanced Scorecard be implemented?

	University level
	Faculty level
	Department level
	Project level
	Other level

42. Which perspectives should be incorporated into the Balanced Scorecard and which strategic objectives should be incorporated into each perspective?

.....

.....

.....

.....

.....

SECTION 5: CONCLUSION

43. If you have any other comments regarding to the performance measurement in the university, please fill in the blank below

.....

.....

.....

.....

.....

SECTION 6: DEMOGRAPHIC DATA

44. Highest Education

- ☐ 1. Less than undergraduate
- ☐ 2. Undergraduate
- ☐ 3. Master degree
- ☐ 4. Doctoral degree
- ☐ 5. Other.....

45. Position in the university

- ☐ 1. Lecturer
- ☐ 2. Researcher
- ☐ 3. Administrative Staffs
- ☐ 4. Manager
- ☐ 5. QA officer
- ☐ 6. Financial controller
- ☐ 7. Others

46. Academic position

- ☐ 1. Lecturer
- ☐ 2. Assistant Professor
- ☐ 3. Associate Professor
- ☐ 4. Professor
- ☐ 5. None
- ☐ 6. Others

47. Which faculty, department in the university are you working for?

.....

THANK YOU VERY MUCH FOR YOUR COOPERATION

APPENDIX 3: THE EXAMPLE OF QUESTIONS USED IN THE INTERVIEW OF STAFF IN CHIANG MAI UNIVERSITY IN THE SURVEY RESEARCH

Section 1 Implementation of the Balanced Scorecard

1. What are the driving forces of the needs for the new PMS within the university?
2. What are the restraining forces of the needs for the new PMS within the university?
3. What are the critical success factors of implementing new PMS within the university?
4. What do you expect from the Balanced Scorecard?
5. After the implementation of the Balanced Scorecard, what do you experience?
6. Do you think that the existing performance measurement system of your university is widely known in your university?
7. Do you know what the Balanced Scorecard is?
8. Are you satisfied with the previous performance measurement system in your university before implementing the Balanced Scorecard?
9. Are you satisfied with the Balanced Scorecard for your university?
10. Do you know how many perspectives are there in the Balanced Scorecard for your university? If yes, can you give reasons why it is categorised into those perspectives?
11. Do you have any other comments on the performance measurement system of the university?

Section 2 Demographic data

1. What is your highest Education?
2. What is your position in the university?
3. What is your academic position?
4. Which faculty and department are you working for?
5. How long have you been working for your university?
6. How old are you?

APPENDIX 4: THE EXAMPLE OF QUESTIONS USED IN THE INTERVIEW OF STAFF IN THAMMASAT UNIVERSITY IN THE SURVEY RESEARCH

Section 1 Implementation of the performance measurement system

1. Do you think that the existing performance measurement system of your university is widely known in your university
2. Are you satisfied with the existing performance measurement system in your university?
3. Do you think that the new performance measurement system is urgently required for your university?
4. Do you know what the Balanced Scorecard is?
5. Do you know what EVA® is?
6. Do you think that the Balanced Scorecard should be implemented within your university?
7. Do you think that EVA® should be implemented within your university?
8. Do you think that the new performance measurement system should be implemented top-down or bottom-up?
9. Do you think that participation of the staff within the university in the design and implementation of the new performance measurement system is appropriate?
10. Do you think that the new performance measurement system will have a long-term effect on your university?
11. Do you think that your university should implement the new performance measurement system at one time (big bang)?
12. Do you think that your university can implement the new performance measurement system successfully?
13. What are the driving forces of the needs for the new performance measurement system within your university?
14. What are the restraining forces of the needs for the new performance measurement system within your university?
15. What are the critical success factors of implementing new performance measurement system within your university?
16. After seeing the demonstration, what are your comments on the proposed model?

17. Do you have any other comments on the performance measurement system of the university?

Section 2 Demographic data

1. What is your highest Education?
2. What is your position in the university?
3. What is your academic position?
4. Which faculty and department are you working for?
5. How long have you been working for your university?
6. How old are you?

APPENDIX 5: QUESTIONNAIRE DISTRIBUTED TO STAFF AT THAMMASAT UNIVERSITY, OTHER PUBLIC UNIVERSITIES, AND THE RELATED GOVERNMENT AGENCIES IN THE SURVEY RESEARCH

SECTION 1 IMPLEMENTATION OF THE NEW PERFORMANCE MEASUREMENT SYSTEM

Please identify the level of your agreement on these following statements

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. The existing performance measurement system (PMS) of the university is widely known in the university					
2. The existing PMS of the university is satisfied					
3. The new PMS is urgently required for the university					
4. I know what the Balanced Scorecard (BSC) is					
5. I know what EVA® is					
6. The BSC should be implemented within the university					
7. EVA® should be implemented within the university					
8. The new PMS should be implemented bottom-up					
9. Participation of the staff within the university in the design and implementation of the new PMS is a slow and time-consuming process and is not appropriate.					
10. The new PMS will have a long-term effect on the organisation					
11. The university should implement the new PMS at one time (big bang)					
12. The university can implement the new PMS successfully					

What are the driving forces of the needs for the new PMS within the university?

Driving Forces	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
13. Government’s policy of the autonomous university					
14. Newly established government’s rules and regulations regarding to the performing measurement of a university					
15. Increasing competition among universities					
16. Low awareness of mission and strategy within a university					
17. Limited translation of strategy into action					
18. Existing PMS is not good enough					

What are the restraining forces of the needs for the new PMS within the university?

Restraining Forces	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
19. More workload					
20. Data insufficiency					
21. Too tight control – no room for personal judgment					
22. Existing PMS is good enough					
23. Not enough resource to implement the new PMS					
24. No support from senior management					

What are the critical success factors of implementing new PMS within the university?

Critical Success Factors	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
25. Good design of the new PMS					
26. Senior management commitment					
27. Involvement of individual					
28. Not keeping PMS only at the top					
29. Not too long process of development					
30. Not treating PMS as a systems project					
31. Hiring experienced consultants					
32. Not introducing the PMS only for compensation					

Please estimate the correlation between performance driver and performance outcome (meaning that by improving performance driver by 100%, how much will it increase the outcome?)

Performance Driver	Performance Outcome	Estimated correlation between performance driver and outcome (%)
33. Training and development expense	Quality of staff development	
34. Quality of staff development	Quality of academic staff	
35. Quality of quality assurance system	Quality of planning	
36. Quality of planning	Quality of learning process	
37. Quality of learning support	Quality of learning process	
38. Quality of academic staff	Quality of graduate	
39. Quality of academic staff	Quality of research	
40. Quality of academic staff	Quality of academic service to community	
41. Quality of learning process	Quality of graduate	
42. Quality of graduate	Quality of research	
43. Quality of research	Quality of academic service to community	

44. Please provide your other comments on the performance measurement system within a university (if any)

SECTION 2 DEMOGRAPHIC DATA

45. Highest Education ☐ 1. Less than undergraduate ☐ 2. Undergraduate ☐ 3. Master degree ☐ 4. Doctoral degree

46. Name of the organisation _____

47. Position in the organisation _____

48. Academic position ☐ 1. Lecturer ☐ 2. Assistant Professor ☐ 3. Associate Professor ☐ 4. Professor

49. Which Faculty/Department/Unit in the university are you working for?

50. Time with the university ☐ 1. Less than 5 years ☐ 2. 5 – 10 years ☐ 3. 11 – 20 years ☐ 4. 21 – 30 years ☐ 5. More than 30 years

51. Age ☐ 1. Less than 20 years ☐ 2. 21 – 30 years ☐ 3. 31 – 40 years ☐ 4. 41 – 50 years ☐ 5. 51 – 60 years ☐ 6. More than 60 years

52. Gender ☐ 1. Male ☐ 2. Female

THANK YOU VERY MUCH FOR YOUR COOPERATION

APPENDIX 6: QUESTIONNAIRE DISTRIBUTED TO STAFF AT CHIANG MAI UNIVERSITY IN THE SURVEY RESEARCH

SECTION 1 IMPLEMENTATION OF THE BALANCED SCORECARD

Please identify the level of your agreement on these following statements

What are the driving forces of the needs for the Balanced Scorecard within the university?

Driving Forces	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Government's policy of the autonomous university					
2. Newly established government's rules and regulations regarding to the performance measurement of a university					
3. Increasing competition among universities					
4. Low awareness of mission and strategy within a university					
5. Limited translation of strategy into action					
6. Existing performance measurement system is not good enough					

What are the restraining forces of the needs for the Balanced Scorecard within the university?

Restraining Forces	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7. More workload					
8. Data insufficiency					
9. Too tight control – no room for personal judgment					
10. Existing performance measurement system is good enough					
11. Not enough resource to implement the Balanced Scorecard					
12. No support from senior management					

What are the critical success factors of implementing the Balanced Scorecard within the university?

Critical Success Factors	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
13. Good design of the Balanced Scorecard					
14. Senior management commitment					
15. Involvement of individual					
16. Not keeping the Balanced Scorecard only at the top					
17. Not too long process of development					
18. Not treating the Balanced Scorecard as a systems project					
19. Hiring experienced consultants					
20. Not introducing the Balanced Scorecard only for compensation					

What do you expect from the Balanced Scorecard?

Expectation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
21. Obtain clarity and consensus about strategy					
22. Achieve focus					
23. Leadership development					
24. Strategic intervention					
25. Educate the organisation					
26. Set strategic targets					
27. Align programmes and investments					
28. Build a feedback system					

After the implementation of the Balanced Scorecard, what do you experience?

Expectation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
29. Obtain clarity and consensus about strategy					
30. Achieve focus					
31. Leadership development					
32. Strategic intervention					
33. Educate the organisation					
34. Set strategic targets					
35. Align programmes and investments					
36. Build a feedback system					

Please identify the level of your agreement on these following statements

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
37. The existing performance measurement system of the university is widely known in the university					
38. I know what the Balanced Scorecard is					
39. The previous performance measurement of the university (before implementing the Balanced Scorecard) is satisfied					
40. The Balanced Scorecard is satisfied					

41. Do you know how many perspectives are there in the Balanced Scorecard for your university? If yes, can you give reasons why it is categorised into those perspectives?

42. Please provide your other comments on the performance measurement system within a university (if any)

SECTION 2 DEMOGRAPHIC DATA

43. Highest Education ☐ 1. Less than undergraduate ☐ 2. Undergraduate ☐ 3. Master degree ☐ 4. Doctoral degree

44. Position in the university _____

45. Academic position ☐ 1. Lecturer ☐ 2. Assistant Professor ☐ 3. Associate Professor ☐ 4. Professor

46. Which Faculty/Department/Unit in the university are you working for?

47. Time with the university ☐ 1. Less then 5 years ☐ 2. 5 – 10 years ☐ 3. 11 – 20 years ☐ 4. 21 – 30 years ☐ 5. More than 30 years

48. Age ☐ 1. Less than 20 years ☐ 2. 21 – 30 years ☐ 3. 31 – 40 years ☐ 4. 41 – 50 years ☐ 5. 51 – 60 years ☐ 6. More than 60 years

49. Gender ☐ 1. Male ☐ 2. Female

THANK YOU VERY MUCH FOR YOUR COOPERATION

QUESTIONNAIRES

IMPLEMENTATION OF THE PERFORMANCE MEASUREMENT FRAMEWORK TO THE UNIVERSITY

APPENDIX 7: QUESTIONNAIRE DISTRIBUTED TO STAFF AT THE FOREIGN UNIVERSITIES IN THE SURVEY RESEARCH

SECTION 1 : IMPLEMENTATION OF NEW PERFORMANCE MEASUREMENT SYSTEM

Please identify the level of your agreement on these following statements

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1: The existing performance measurement system (PMS) of your university is widely known in the university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2: The existing PMS of your university is satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3: The new PMS is urgently required for your university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4: I know what the Balanced Scorecard (BSC) is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5: I know what the EVA® is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6: The BSC should be implemented within your university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7: The EVA® should be implemented within your university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8: The new PMS should be implemented bottom-up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9: Participation of the staff within the university in the design and implementation of the new PMS is a slow and time-consuming process and is not appropriate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10: The new PMS will have a long-term effect (either positive or negative) on the university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11: Your university should implement the new PMS at one time (big bang)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12: Your university can implement the new PMS successfully	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What are the driving forces of the needs for the new PMS within your university ?					
Driving Forces	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
13: Government's policy on budget allocation to the university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14: Government's rules and regulations regarding to the performance measurement of a university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15: Increasing competition among universities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16: Low awareness of mission and strategy within a university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17: Limited translation of strategy into action	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18: Existing PMS is not good enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What are the restraining forces of the needs for the new PMS within your university ?					
Restraining Forces	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
19: More workload	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20: Data insufficiency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21: Too tight control - no room for personal judgment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22: Existing PMS is good enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23: Not enough resource to implement the new PMS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24: No support from senior management

☐

☐

☐

☐

☐

What are the critical success factors of implementing new PMS within your university ?

Critical Success Factors

25: Good design of the new PMS

☐

☐

☐

☐

☐

26: Senior management commitment

☐

☐

☐

☐

☐

27: Involvement of individual

☐

☐

☐

☐

☐

28: Not keeping PMS only at the top

☐

☐

☐

☐

☐

29: Not too long process of development

☐

☐

☐

☐

☐

30: Not treating PMS as a systems project

☐

☐

☐

☐

☐

31: Hiring experienced consultants

☐

☐

☐

☐

☐

32: Not introducing the PMS only for compensation

☐

☐

☐

☐

☐

33: Does your university or part of university implement the Balanced Scorecard ?

☐ Yes

☐ No

☐ Do not know

34: If yes which unit

35: Does your university or part of university implement the EVA® ?

☐ Yes

☐ No

☐ Do not know

36: If yes which unit

37: Please provide your other comments on the performance measurement system within your university (if any)

SECTION 2 : DEMOGRAPHIC DATA

38: Highest Education

- ☐ Less than undergraduate
- ☐ Undergraduate
- ☐ Master degree
- ☐ Doctoral degree

39: Name of the university

40: In which country that your university is located

41: Position in the university

42: Academic position

- ☐ Lecturer
- ☐ Associate Professor (Senior Lecturer)
- ☐ Associate Professor (Reader)
- ☐ Professor

43: Which Faculty/Department/Unit in the university are you working for ?

44: Time with the university

- ☐ Less then 5 years
- ☐ 5 - 10 years
- ☐ 11 - 20 years
- ☐ 21 - 30 years
- ☐ More than 30 years

45: Age

- ☐ Less than 20 years
- ☐ 21 - 30 years
- ☐ 31 - 40 years
- ☐ 41 - 50 years
- ☐ 51 - 60 years
- ☐ More than 60 years

46: Gender

- ☐ Male
- ☐ Female

Submit

Reset

APPENDIX 8: CALCULATION OF THE SAMPLE SIZE

In the survey research conducted to management staff in Thammasat University, the samples are selected to be the representative of the population, which in this case, are all management staff in the University. Method of the calculation of the sample size in the study is as follows.

Information

- The number of population of management staff in the University (both academic and nonacademic) is 391.
- For the population of total management staff, 70% are academic staff and 30% is nonacademic staff.
- Thus the number of academic management staff is 274 and the population of nonacademic management staff is 117.

The formula for sample size when the population is small (obtained from Rea and Parker (1992:131)) is

$$n = \{Z_{\alpha} [p (1-p)]^{1/2}/C_p \times [(N-n)/(N-1)]^{1/2}\}^2 \text{ or solving for } n$$

$$n = \frac{Z_{\alpha}^2 [p (1-p)] N}{Z_{\alpha}^2 [p (1-p)] + (N-1) C_p^2}$$

Where n = sample size, N = population size, p = true proportion (assumed to be 0.5 to result in the highest sample size), Z_{α} = Z score for various levels of confidence (α), and C_p = confidence interval in terms of proportions.

With a margin of error that does not exceed 5% ($C_p = 0.05$) and with 95% percent level of confidence ($Z = 1.96$), Then the sample of each type of management staff, academic and nonacademic, can be calculated as follows.

Sample of academic management staff when population (N) = 274

$$n = \frac{1.96^2 [0.5 (1-0.5)] 274}{1.96^2 [0.5 (1-0.5)] + (274-1) 0.05^2} = 160$$

Sample of nonacademic management staff when population (N) = 117

$$n = \frac{1.96^2 [0.5 (1-0.5)] 117}{1.96^2 [0.5 (1-0.5)] + (117-1) 0.05^2} = 90$$

As a result, the sample of academic management staff is equal to 160 and sample of nonacademic management staff is equal to 90.

Note that as the response rate in this study is found to be 36.4% (91 returned questionnaires, $n = 91$). Using the same formula, with 95% percent level of confidence ($Z = 1.96$), the margin of error (C_p) can be calculated as follows.

$$91 = \frac{1.96^2 [0.5 (1-0.5)] 391}{1.96^2 [0.5 (1-0.5)] + (391-1) C_p^2}$$

$$C_p = 9\%$$

The marginal error in this study is then 9%, which is still in the typical range (Rea and Parker 1992:129).

REFERENCES

- Adams, F.G. and Vernon, H. (2001) Comparing Business Cultures: Thailand and The U.S. *Sasin Journal of Management* 7 1-8.
- Ahrens, T. and Chapman, C. (2002) Loosely coupled performance measurement systems. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 244-258. Cambridge: Cambridge University Press]
- Aidemark, L.-G. (2001) The Meaning of Balanced Scorecards in the Health Care Organisation. *Financial Accountability & Management* 17 (1):23-40.
- Altbach, P.C. (1999) Comparative perspectives on private higher education. In: Altbach, P.C., Private Prometheus: Private higher education and development in the 21st century. Westport, CT: Greenwood Press]
- Ambler, T. and Kokkinaki, F. (2002) Measuring marketing performance: Which way is up? In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 225-243. Cambridge: Cambridge University Press]
- Anthony, R.N. and Young, D.W. (2003) Management Control in Nonprofit Organizations. 7th edn, New York: McGraw-Hill Irwin.
- Austin, R. and Gittell, J.H. (2002) When it should not work but does: Anomalies of high performance. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 80-106. Cambridge: Cambridge University Press]
- Bailey, A.R., Chow, C.W. and Haddad, K.M. (1999) Continuous improvement in business education: Insights from the for-profit sector and business school deans. *Journal of Education for Business* 74 (3):165-180.
- Barsky, N.P. and Bremser, W.G. (1999) Performance Measurement Budgeting and Strategic Implementation in the Multinational Enterprise. *Managerial Finance* 25 (2):3-15.
- Beckett-Camarata, Jane and Camarata, Martin R. (2000) Toward an Integrative Model: Performance Measurement in Not-for-Profit Organizations. In A. Neely (Ed) *Performance Measurement 2000: Past, Present and Future*, 19-21 July 2000, Cambridge, 40-47
- Biddle, G.C., Bowen, R.M. and Wallace, J.S. (1997) Does EVA® beat earnings? Evidence on associations with stock returns and firm values. *Journal of Accounting and Economics* 24 (3):301-336.
- Bititci, U., Carrie, A. and Turner, T. (2002) Integrated performance measurement systems: Structure and dynamics. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 174-197. Cambridge: Cambridge University Press]
- Blair, A. (1997) Watching the new metrics. *Management today* 48-50.

- Bourne, M. and Neely, A. (2002) Why measurement initiatives succeed and fail: The impact of parent company initiatives. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 198-208. Cambridge: Cambridge University Press]
- Brennan, J. and Shah, T. (2000) *Managing Quality in Higher Education: An International Perspective on Institutional Assessment and Change*. Buckingham: Open University Press.
- Brewer, P.C., Chandra, G. and Hock, C.A. (1999) Economic Value Added (EVA): Its Uses and Limitations. *S.A.M. Advanced Management Journal* 64 (2):4-11.
- Brewer, P.C. and Speh, T.W. (2000) Using the Balanced Scorecard to measure supply chain performance. *Journal of Business Logistics* 21 (1):75-84.
- Brigham, E.F. and Gapenski, L.C. (1997) *Financial Management: Theory and Practices*. 8th edn, Orlando: The Dryden Press.
- Brown, R. (2004) *Quality Assurance in Higher Education The UK Experience since 1992*, London: RoutledgeFalmer.
- Butler, A., Letza, S.R. and Neale, B. (1997) Linking the balanced scorecard to strategy. *Long Range Planning* 30 (2):242-253.
- Campbell, A. (1998) Fayol, Henri. In: Warner, M., (Ed.) *The IEBM Handbook of Management Thinking*, pp. 184-189. London : International Thomson Business Press]
- Campbell, D.T. and Fiske, D.W. (1959) Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin* 56, 81-105.
- Cave, M., Kogan, M, and Hanney, S. (1989) Performance Measurement in Higher Education. *Public Money & Management* 9 (1): 11-16.
- Champy, J. and Hammer, M. (1993) *Reengineering the Corporation*. London: Nicholas Brealey.
- Chang, O.H. and Chow, C.W. (1999) The Balanced Scorecard: A potential tool for supporting change and continuous improvement in accounting education. *Issues in Accounting Education* 14 (3):395-412.
- Chenhall, R.H. (2003) Management control system design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society* 28 127-168.
- Clark, B. (2002) Measuring performance: The marketing perspective. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 22-40. Cambridge: Cambridge University Press]

- Cordeiro, J.J. and Kent Jr., D.D. (2001) Do EVA adopters outperform their industry peers? Evidence from security analyst earnings forecasts. *American Business Review* 19 (2):57-63.
- Crainer, S. (1996) *Key Management Ideas*. London: Pitman Publishing.
- Crainer, S. and Obeng, E. (1995) Re-engineering Overview. In: Crainer, S., (Ed.) *The Financial Times Handbook of Management*, pp. 231-241. London: Pitman Publishing]
- Creswell, J.W. (1994) *Research Design: Qualitative & Quantitative Approaches*. London: SAGE.
- Cunningham, I. (1995) Managing Change. In: Crainer, S., (Ed.) *The Financial Times Handbook of Management*, pp. 25-33. London : Pitman Publishing]
- De Boer, H., Huisman, J., Klemperer, A., Van Der Meulen, B., Neave, G., Theisens, H., and Van Der Wende, M. (2002) Academia in the 21st century: An analysis of trends and perspectives in higher education and research. Adviesraad voor het Wetenschaps – en Technologiebeleid (AWT):
- Demin, X., Suiyuan, Q, and Runxiao, W. (2001) Quality Assurance and Evaluation of Higher Education in Mainland China In: Dunkerley, D. and Wong, W. S., (Ed.) *Global Perspectives on Quality in Higher Education*, pp. 11-33. Hants: Ashgate Publishing]
- De Villiers, J. (1997) The Distortions in Economic Value Added (EVA) Caused by Inflation. *Journal of Economics and Business* 49 (3):285-300.
- Denton, G.A. and White, B. (2000) Implementing a Balanced Scorecard Approach to Managing Hotel Operations: The Case of White Lodging Services. *The Cornell Hotel and Restaurant Administration Quarterly* 41 (1):94-107.
- Dickson, T. (1995) Quality and Beyond. In: Crainer, S., (Ed.) *The Financial Times Handbook of Management*, pp. 194-204. London: Pitman Publishing]
- Dinesh, D. and Palmer, E. (1998) Management By Objectives and the Balanced Scorecard: Will Rome fall again? *Management Decision* 36 (5/6):363-369.
- Dow, K. L (2001) Strengthening Quality Assurance in Australian Higher Education In: Dunkerley, D. and Wong, W. S., (Ed.) *Global Perspectives on Quality in Higher Education*, pp. 123-142. Hants: Ashgate Publishing]
- Drucker, P.F. (1954) *The Practice of Management*. London: Heinemann.
- Easterby-Smith, M., Thorpe, R. and Lowe, A. (2002) *Management Research*. 2nd edn, London: SAGE.
- Eaton, J. (2001) Accreditation and Quality in the United States: Practice and Pressures In: Dunkerley, D. and Wong, W. S., (Ed.) *Global Perspectives on Quality in Higher Education*, pp. 91-105. Hants: Ashgate Publishing]

- Eisenhardt, K.M. (1989) Building Theories from Case Study Research. *Academy of Management Review* 14 (4):532-550.
- Epstein, M. and Manzoni, J. F. (1998) Implementing Corporate Strategy: From Tableaux de Bord to Balanced Scorecards. *European Management Journal* 16 (2):190-203.
- Faculty of Commerce and Accountancy (2003) Self Assessment Report. Bangkok: Thammasat University
- Fowler, F.J. (1988) Survey Research Methods. Newbury Park, CA: Sage.
- Franco-Santos, M., Marr, B., Martinez, V., Gray, D., Adams, C., Micheli, P., Bourne, M., Kennerley, M., Mason, S., and Neely, A. (2004) Towards a Definition of a Business Performance Measurement System. In A. Neely, M. Kennerley, and A. Walters (Eds.). Performance Measurement and Management: Public and Private, 28-30 July 2004, Edinburgh. Stirling: Centre for Business Performance, Cranfield School of Management, 395-402.
- Friedmann, G. (1955) Industrial Society: The Emergence of the Human Problems of Automation. Glenco, IL: The Free Press.
- Glaser, B. and Strauss, A. (1967) The Discovery of Grounded Theory. Chicago: Aldine.
- Goodwin, P. and Wright, G. (2004) Decision Analysis for Management Judgment. 3rd edn. Chichester: John Wiley & Sons.
- Haddad, K.M. (1999) Using the Balanced Scorecard for improving finance education. *Financial Practice & Education* 9 (1):92-101.
- Hammer, M. (1990) Reengineering Work: Don't Automate, Obliterate. *Harvard Business Review* 68 (4):104-112.
- Handy, C. (1976) Understanding Organizations. London: Penguin.
- Heinz, A. (2001) Applying the Balanced Scorecard Concept: An Experience Report. *Long Range Planning* 34 (4):441-461.
- Heizer, J. and Render, B. (2004) Operations Management. 7th edn, New Jersey: Pearson Education International.
- Hepworth, P. (1998) Weighing it up - A literature review for the Balanced Scorecard. *Journal of Management Development* 17 (7/8):559-563.
- Higher Education Statistics Agency (2006) Performance Indicators in Higher Education. [Available on Internet:] <http://www.hesa.ac.uk/pi/0405/guide.htm>. Date of access: August 2006
- Hindle, T. (2000) Guide to Management Ideas. London: St Edmundsbury.

- Hofstede, G. (1980) *Culture's Consequences International Differences in Work-Related Values*. London: Sage Publications.
- Hofstede, G. (1994) *Uncommon Sense About Organizations*. Thousand Oaks: Sage Publications.
- Holmes, H. and Tangtongtavy, S. (1996) *Working with the Thais*. Bangkok: White Lotus.
- Jacobs, D. (2001) External Quality Assurance in Higher Education in South Africa In: Dunkerley, D. and Wong, W. S., (Ed.) *Global Perspectives on Quality in Higher Education*, pp. 143-154. Hants: Ashgate Publishing]
- Jick, T.D. (1979) Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly* 24, 602-611.
- Johnes, J. and Taylor, J. (1990) *Performance Indicators in Higher Education: UK Universities*. Buckingham: Open University Press.
- Johnson, T. and Kaplan, R. (1987) *Relevance Lost - The Rise and Fall of Management Accounting*. Boston, MA: Harvard Business School Press.
- Jones, M. (1998) Hammer, Michael. In: Warner, M., (Ed.) *The IEBM Handbook of Management Thinking*, pp. 267-272. London: International Thomson Business Press]
- Juran, J.M. (1993) Why quality initiatives fail. *Journal of Business Strategy* 14 (4)
- Kanter, R.M. (1983) *The Change Masters: Innovation for Productivity in the American Corporation*. New York: Simon & Schuster.
- Kaplan, R.S. and Norton, D.P. (1992) The Balanced Scorecard - Measures that Drive Performance. *Harvard Business Review* 70 (1):71-89.
- Kaplan, R.S. and Norton, D.P. (1996a) *The Balanced Scorecard*. Boston, Massachusetts: Harvard Business School Press.
- Kaplan, R.S. and Norton, D.P. (1996b) Using the Balanced Scorecard as a strategic management system. *Harvard Business Review* 74 (1):75-85.
- Kaplan, R.S. and Norton, D.P. (2001) *The Strategy-Focused Organization*. Boston, Massachusetts: Harvard Business School Press.
- Kast, F.E. and Rosenzweig, J.E. (1973) *Contingency Views of Organization and Management*. Chicago: Science Research Associates Inc.
- Kennerley, M. and Neely, A. (2002) Performance measurement frameworks: A review. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 145-155. Cambridge: Cambridge University Press]
- Koontz, H. (1961) The Management Theory Jungle. *Academy of Management Journal* 4 174-188.

- Kwong, J. (2000) Introduction: Marketization and privatization in education. *International Journal of Educational Development* 20 (2):87-92.
- Lawrence, S. and Sharma, U. (2002) Commodification of Education and Academic Labour - Using the Balanced Scorecard in a University Setting. *Critical Perspective on Accounting* 13 661-677.
- Leach, J. (2004) *The Guardian University Guide 2005*. London: Atlantic Books.
- Leach, J. (2006) *The Guardian University Guide 2007*. London: Cambridge University Press.
- Lebas, M. and Euske, K. (2002) A conceptual and operational delineation of performance. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 65-79. Cambridge: Cambridge University Press]
- Lemaitre, M. J. (2001) Chile: Quality Assurance in a Context of Change In: Dunkerley, D. and Wong, W. S., (Ed.) *Global Perspectives on Quality in Higher Education*, pp. 106-122. Hants: Ashgate Publishing]
- Leong, J. and Wong, W. S. (2001) The Quality Assurance of Higher Education in Hong Kong In: Dunkerley, D. and Wong, W. S., (Ed.) *Global Perspectives on Quality in Higher Education*, pp. 34-45. Hants: Ashgate Publishing]
- Lewin, K. (1951) *Field Theory in Social Science*. New York: Harper & Brothers.
- Litwin, M.S. (1995) *How to Measure Survey Reliability and Validity*. Thousand Oaks, CA: Sage Publications, Inc.
- Longenecker, J.G. and Pringle, C.D. (1978) The Illusion of Contingency Theory as a General Theory. *Academy of Management Review* 679-683.
- Luthans, F. (1973) The Contingency Theory of Management: A path out of the jungle. *Business Horizon* 67-72.
- Maslow, A.H. (1943) A theory of human motivation. *Psychological Review* 50:370-396.
- Maslow, A.H. (1954) *Motivation and Personality*. New York: Harper & Bros.
- Mayle, D., Hinton, M., Francis, G. and Holloway, J. (2002) What really goes on in the name of benchmarking? In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 211-224. Cambridge: Cambridge University Press]
- Minchington, C. and Francis, G. (2000) Divisional Performance Measures: EVA as a proxy for shareholder wealth. *International Journal of Business Performance Measurement* 2, 98-108.
- Ministry of University Affairs (2002) *Higher Education Data and Information 2002*. Bangkok: Information Centre, Office of Permanent Secretary for University Affairs.

- Ministry of University Affairs (2003a) Information. [Available on Internet:] <http://www.inter.mua.go.th> . Date of access: March 2003.
- Ministry of University Affairs (2003b) Quality Assurance. [Available on Internet:] <http://www.qa.mua.go.th> Date of access: June 2003
- Mockler, R.J. (1971) Situational Theory of Management. *Harvard Business Review* 49 (3):146-152.
- Moore, J.H. and Weatherford, L.R. (2001) Decision Modeling with Microsoft Excel. 6th edn, New Jersey: Prentice-Hall Inc.
- Mouritsen, J. (1998) Driving growth: Economic Value Added versus Intellectual Capital . *Management Accounting Research* 9 (4):461-482.
- Murray, E. and Richardson, P. (2002) The critical few: First among equals as parameters of strategic effectiveness. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 156-173. Cambridge: Cambridge University Press]
- National Statistical Office (2005) Statistics [Available on Internet:] <http://www.nso.go.th/eng/stat/stat.htm> Date of access: June 2005
- Neely, A. (2002) Preface. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. xi Cambridge: Cambridge University Press]
- Neely, A. and Austin, R. (2002) Measuring performance: The operations perspective. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 41-50. Cambridge: Cambridge University Press]
- Niven, P.R. (2003) Balanced Scorecard Step-By-Step for Government and Nonprofit Agencies. New Jersey: John Wiley & Sons.
- Norreklit, H. (2000) The balance on the Balanced Scorecard a critical analysis of some of its assumptions. *Management Accounting Research* 11 (1):65-88.
- O'Leary, J., Hindmarsh, A. and Kingston, B. (2004) The Times Good University Guide 2005 . London: HarperCollins Publishers.
- O'Leary, J., Hindmarsh, A. and Kingston, B. (2006) The Times Good University Guide 2007 . London: HarperCollins Publishers.
- Oliver, N. and Wilkinson, B. (1992) The Japanisation of British Industry. Oxford: Blackwell.
- Office for National Education Standards and Quality Assessment (2002) Framework for External Quality Assessment for Higher Education. Bangkok: Office for National Education Standards and Quality Assessment (ONESQA).
- Ogata, K. and Goodkey, R. (2002) Redefining government performance. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 259-276. Cambridge: Cambridge University Press]

- Olson, E.M. and Slater, S.F. (2002) The Balanced Scorecard, competitive strategy, and performance. *Business Horizons* 45 (3):11-16.
- Olve, N.-G., Roy, J. and Wetter, M. (1999) Performance Drivers. Chichester: John Wiley & Sons.
- Osterloh, M. and Frey, B.S. (2002) Does pay for performance really motivate employees? In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 107-122. Cambridge: Cambridge University Press]
- Otley, D. (1999) Performance management: a framework for management control systems research. *Management Accounting Research* 10 (4):363-382.
- Otley, D. (2002) Measuring performance: The accounting perspective. In: Neely, A., (Ed.) *Business Performance Measurement: Theory and Practice*, pp. 3-21. Cambridge: Cambridge University Press]
- Paton, R.A. and McCalman, J. (2000) Change Management: A guide to effective implementation. Second edn, London: Sage Publications.
- Paul, J. (1996) Between-Method Triangulation in Organizational Diagnosis. *International Journal of Organizational Analysis* 4, 135-153.
- Pugh, D.S. (1978) Understanding and managing organizational change. *London Business School Journal* 3 (2):29-34
- Pursglove, J. (2002) A case study in building a Balanced Scorecard for an internal service provider. In A. Neely, A. Walters, and R. Austin (Eds.). Performance Measurement and Management: Research and Action, 17-19 July 2002, Boston, 767-773.
- Pursglove, J. and Simpson, M. (2000) A Balanced Scorecard for University Research. In A. Neely, (Ed) *Performance Measurement 2000: Past, Present and Future*, 19-21 July 2000, Cambridge, 467-474.
- Pursglove, J. and Simpson, M. (2001) A model for university financial performance. *International Journal of Business Performance Management* 3 (1):1-15.
- Quality Assurance Agency for Higher Education (2006) About the Quality Assurance Agency for Higher Education. [Available on Internet:] <http://www.qaa.ac.uk/aboutus/> Date of access: August 2006
- Randall, J. (2001) Academic Review in the United Kingdom In: Dunkerley, D. and Wong, W. S., (Ed.) *Global Perspectives on Quality in Higher Education*, pp. 57-69. Hants: Ashgate Publishing]
- Rea, L.M. and Parker, R.A. (1992) Designing and Conducting Survey Research: A Comprehensive Guide. San Francisco: Jossey-Bass Publishers.
- Remenyi, D., Money, A., Price, D. and Bannister, F. (2002) The Creation of Knowledge Through Case Study Research. *Irish Journal of Management* 23 (2):1-17.

- Riley, M., Wood, R.C., Clark, M.A., Wilkie, E. and Szivas, E. (2000) *Researching and Writing Dissertations in Business and Management*. London: Thomson Learning.
- Ritzer, G. (1998) Weber, Max. In: Warner, M., (Ed.) *The IEBM Handbook of Management Thinking*, pp. 730-735. London : International Thomson Business Press]
- Ruben, B. (1999) Toward a Balanced Scorecard for Higher Education: Rethinking the College and University Excellence Indicators Framework. [Available on Internet:] <http://www.odl.rutgers.edu/score.pdf> Date of access: July 2003.
- Saunders, M., Lewis, P. and Thornhill, A. (2003) *Research Methods for Business Students*. 3rd edn, Essex: Pearson Education.
- Schneiderman, A.M. (1999) Why Balanced Scorecards Fail. *Strategic Performance Measurement* January Special Edition:6-11.
- Senge, P.M. (1990) *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday.
- Shafer, S.M. and Meredith, J.R. (1998) *Operations Management*. New York: John Wiley & Sons.
- Sihler, W.H. (1971) Toward Better Management Control Systems. *California Management Review* 10 (3):33-39.
- Silverman, D. (2001) *Interpreting Qualitative Data*. 2nd edn, London: SAGE.
- Southern, G. (2002) From Teaching to Practice, via Consultancy, and then to Research? *European Management Journal* 20 (4):401-406.
- Stake, R. (1995) *The Art of Case Study Research*. Thousand Oaks: Sage.
- Stern, J.M., Shiely, J.S. and Ross, I. (2001) *The EVA Challenge: Implementing Value-Added Change in an Organization*. New York: John Wiley & Sons, Inc.
- Stern, J.M., Stewart, G.B. and Chew Jr., D.H. (1996) EVA: An integrated financial management system. *European Financial Management* 2 (2):223-245. 1354-7798.
- Stern Stewart & Co. (2005) EVA Companies. [Available on Internet:] <http://www.eva.com/evaabout/evacomp.php> . Date of access: June 2005
- Stewart, A.C. and Carpenter-Hubin, J. (2000) The Balanced Scorecard Beyond Reports and Rankings. *Planning for Higher Education* 29 (2):37-42.
- Stewart, G.B. (1991) *The Quest for Value*. New York: HarperBusiness.
- Stewart, G.B., Ellis, M. and Budington, D. (2002) Stern Stewart's EVA Clients Outperform the Market and Their Peers. *EVAuation*

- The Oxford Dictionary of Current English (2001) 3rd edn, Oxford: Oxford University Press.
- The University of Edinburgh (2004). University of Edinburgh's Balanced Scorecard. [Available on Internet:] <http://www.planning.ed.ac.uk/BSC.htm>. Date of access: April 2004.
- Thune, C. (2001) Quality Assurance of Higher Education in Denmark In: Dunkerley, D. and Wong, W. S., (Ed.) *Global Perspectives on Quality in Higher Education*, pp. 70-90. Hants: Ashgate Publishing]
- Transfield, D. and Starkey, K. (1998) The Nature, Social Organization and Promotion of Management Research: Towards Policy. *British Journal of Management* 9, 341-353.
- Vakkuri, J. and Meklin, P. (2002) Design and Use of Performance Measurement Systems in Knowledge Organizations – The Impact of Culture on Performance Measurement Outcomes in the University. In A. Neely, A. Walters, and R. Austin (Eds.). *Performance Measurement and Management: Research and Action*, 17-19 July 2002, Boston, 555-562.
- Vakkuri, J. and Meklin, P. (2003) The impact of culture on the use of performance measurement information in the university setting. *Management Decision* 41 (8):751-759.
- Van Vught, F. and Westerheijden, D. F. (1993) Quality Management and Quality Assurance in European Higher Education: Methods and Mechanisms. Luxembourg: Office of the Official Publications of the European Commissions.
- Wallace, J.S. (1997) Adopting residual income-based compensation plans: Do you get what you pay for? *Journal of Accounting and Economics* 24 (3):275-300.
- Warner, M. (1998) Taylor, Frederick Winslow. In: Warner, M., (Ed.) *The IEBM Handbook of Management Thinking*, pp. 656-660. London : International Thomson Business Press]
- Weissenrieder, F. (1997) Value Based Management: Economic Value Added or Cash Value Added? Gothenburg Studies in Financial Economics.
- Witzel, M. (1998a) Drucker, Peter F. In: Warner, M., (Ed.) *The IEBM Handbook of Management Thinking*, pp. 160-165. London: International Thomson Business Press]
- Witzel, M. (1998b) Handy, Charles. In: Warner, M., (Ed.) *The IEBM Handbook of Management Thinking*, pp. 273-278. London: International Thomson Business Press]
- Witzel, M. (1998c) Kanter, Rosabeth Moss. In: Warner, M., (Ed.) *The IEBM Handbook of Management Thinking*, pp. 341-344. London : International Thomson Business Press]

- Yin, R.K. (1993) *Applications of Case Study Research*. Newbury Park, CA: Sage.
- Yin, R.K. (1994) *Case Study Research: Design and Methods*. 2nd edn, Thousand Oaks: Sage.
- Yin, R.K. (2003) *Case Study Research: Design and Methods*. 3rd edn, Thousand Oaks: Sage.
- Zikmund, W.G. (2003) *Business Research Methods: 7th Edition*. Mason: Thomson South-Western.